

**Set Name Query**  
side by side

**Hit Count Set Name**  
result set

DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=ADJ

<u>L17</u>	113 and L16	33	<u>L17</u>
<u>L16</u>	(504/128 OR 504/129 OR 504/133 OR 504/136 OR 504/367).CCLS.	673	<u>L16</u>
<u>L15</u>	113 and L14	152	<u>L15</u>
<u>L14</u>	504.clas.	15242	<u>L14</u>
<u>L13</u>	111 and L12	165	<u>L13</u>
<u>L12</u>	(water dispersi\$4) or wd	44954	<u>L12</u>
<u>L11</u>	14 and L10	475	<u>L11</u>
<u>L10</u>	15 same L9	13642	<u>L10</u>
<u>L9</u>	16 or L8	66081	<u>L9</u>
<u>L8</u>	(alcohol or alkylphenol or copolymer\$5) near3 17	55187	<u>L8</u>
<u>L7</u>	alkoxy\$5 or ethoxy\$5 or propoxy\$5 or oxyalkyl\$5 or oxyethyl\$5 or oxypropyl\$5 or polyalkoxy\$5 or polyethoxy\$5 or polypropoxy\$5 or polyoxyalkyl\$5 or polyoxyethyl\$5 or polyoxypropyl\$5 or EO or po	572581	<u>L7</u>
<u>L6</u>	lignosulfon\$4 or lignosulphon\$4 or (naphthalene near3 sulfonate\$1 near3 formaldehyde) or ((polyvinylalcohol or (polyvinyl alcohol)) near3 (vinylacetate\$1 or (vinyl acetate\$1)))	13462	<u>L6</u>
<u>L5</u>	dispers\$6	873435	<u>L5</u>
<u>L4</u>	11 same 12	1108	<u>L4</u>
<u>L3</u>	11 and L2	1228	<u>L3</u>
<u>L2</u>	sulfonylurea\$1 or cinosulfuron or metsulfuron or nicosulfuron or primisulfuron or rimsulfuron or sulfometuron or thifensulfuron or triflusulfuron	5057	<u>L2</u>
<u>L1</u>	chlorsulfuron or chlorosulfuron or bensulfuron	2472	<u>L1</u>

END OF SEARCH HISTORY

**WEST**

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**Search Results - Record(s) 1 through 10 of 33 returned.**☐ 1. Document ID: US 20030109384 A1

L17: Entry 1 of 33

File: PGPB

Jun 12, 2003

PGPUB-DOCUMENT-NUMBER: 20030109384

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030109384 A1

TITLE: Water dispersible starch based physical form modification of agricultural agents

PUBLICATION-DATE: June 12, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Hartmann, Frank D. J.	Wilmington	DE	US	
Eden, James L.	East Millstone	NJ	US	
Solarek, Daniel B.	Hillsborough	NJ	US	
Rommens, Johan C. G.	Kortenbergh		BE	
Auda, Mahroussa I.	Sint Denijs Westrem		BE	

US-CL-CURRENT: 504/206; 504/367, 514/407, 514/778, 514/952

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Drawn Desc	Image								

KMIC

☐ 2. Document ID: US 20030104941 A1

L17: Entry 2 of 33

File: PGPB

Jun 5, 2003

PGPUB-DOCUMENT-NUMBER: 20030104941

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030104941 A1

TITLE: Synergistic herbicidal compositions comprising herbicides from the benzoylcyclohexanedione group for use in rice crops

PUBLICATION-DATE: June 5, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Auler, Thomas	Bad Soden		DE	
Almsick, Andreas van	Karben		DE	
Hacker, Erwin	Hochhiem		DE	
Millet, Jean-Claude	Ecully		FR	
Endo, Keiji	Makabe-gun		JP	

US-CL-CURRENT: 504/129

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

K00C

☐ 3. Document ID: US 20030087761 A1

L17: Entry 3 of 33

File: PGPB

May 8, 2003

PGPUB-DOCUMENT-NUMBER: 20030087761

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030087761 A1

TITLE: Synergistic active compound combinations for controlling harmful plants

PUBLICATION-DATE: May 8, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Ahrens, Hartmut	Frankfurt		DE	
Dietrich, Hansjorg	Hofheim		DE	
Willms, Lothar	Hofheim		DE	
Hacker, Erwin	Hochheim		DE	
Bieringer, Hermann	Eppstein		DE	

US-CL-CURRENT: 504/133

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

K00C

☒ 4. Document ID: US 20030022792 A1

L17: Entry 4 of 33

File: PGPB

Jan 30, 2003

PGPUB-DOCUMENT-NUMBER: 20030022792

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030022792 A1

TITLE: HERBICIDAL COMPOSITIONS FOR TOLERANT OR RESISTANT CEREAL CROPS

PUBLICATION-DATE: January 30, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
HACKER, ERWING	HOCHHEIM		DE	
BIERINGER, HERMANN	EPPSTEIN		DE	
WILLMS, LOTHAR	HOFHEIM		DE	

US-CL-CURRENT: 504/127; 504/128

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

K00C

☐ 5. Document ID: US 20030004064 A1

L17: Entry 5 of 33

File: PGPB

Jan 2, 2003

PGPUB-DOCUMENT-NUMBER: 20030004064

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030004064 A1

TITLE: Synergistic active compound combinations for controlling harmful plants

PUBLICATION-DATE: January 2, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Ahrens, Hartmut	Frankfurt		DE	
Minn, Klemens	Hattersheim		DE	
Dietrich, Hansjorg	Hofheim		DE	
Willms, Lothar	Hofheim		DE	
Hacker, Erwin	Hochheim		DE	
Bieringer, Hermann	Eppstein		DE	

US-CL-CURRENT: 504/133; 504/134

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC

☒ 6. Document ID: US 6559098 B1

L17: Entry 6 of 33

File: USPT

May 6, 2003

US-PAT-NO: 6559098

DOCUMENT-IDENTIFIER: US 6559098 B1

TITLE: Sulphonylurea and/adjuvant based solid mixtures

DATE-ISSUED: May 6, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bratz, Matthias	Limburgerhof			DE
Jäger, Karl-Friedrich	Limburgerhof			DE
Berghaus, Rainer	Speyer			DE

US-CL-CURRENT: 504/133, 504/134, 504/136, 504/211, 504/212, 504/214, 504/321, 504/332

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC

☒ 7. Document ID: US 6492301 B1

L17: Entry 7 of 33

File: USPT

Dec 10, 2002

US-PAT-NO: 6492301

DOCUMENT-IDENTIFIER: US 6492301 B1

TITLE: Herbicidal compositions with substituted phenylsulfonylureas for controlling weeds in rice

DATE-ISSUED: December 10, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hacker; Erwin	Hochheim			DE
Bieringer; Hermann	Eppstein			DE

US-CL-CURRENT: 504/128; 504/132, 504/133, 504/134, 504/135

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☒ 8. Document ID: US 6486096 B1

L17: Entry 8 of 33

File: USPT

Nov 26, 2002

US-PAT-NO: 6486096

DOCUMENT-IDENTIFIER: US 6486096 B1

TITLE: Herbicidal compositions with acylated aminophenylsulfonylureas

DATE-ISSUED: November 26, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hacker; Erwin	Hochheim			DE
Bieringer; Hermann	Eppstein			DE
Schnabel; Gerhard	Grosswallstadt			DE

US-CL-CURRENT: 504/133; 504/128, 504/134, 504/136

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☒ 9. Document ID: US 6455470 B1

L17: Entry 9 of 33

File: USPT

Sep 24, 2002

US-PAT-NO: 6455470

DOCUMENT-IDENTIFIER: US 6455470 B1

TITLE: Herbicidal compositions

DATE-ISSUED: September 24, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Parrish; Scott K.	Veradale	WA		

US-CL-CURRENT: 504/130; 504/129, 504/131, 504/132, 504/133, 504/134, 504/135,  
504/136, 504/137, 504/138, 504/139, 504/140, 504/141, 504/142, 504/143, 504/144,  
504/145, 504/146, 504/147, 504/148, 504/149

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC

☒ 10. Document ID: US 6221809 B1

L17: Entry 10 of 33

File: USPT

Apr 24, 2001

US-PAT-NO: 6221809

DOCUMENT-IDENTIFIER: US-6221809-B1

TITLE: Herbicidal compositions comprising  
N-[(4,6-dimethoxypyridin-2-yl)aminocarbonyl]-5-methylsulphonamidomethyl-2-  
alkoxycarbonylbenzene sulphonamides

DATE-ISSUED: April 24, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hacker; Erwin	Hochheim			DE
Bieringer; Hermann	Eppstein			DE
Lorenz; Klaus	Weiterstadt			DE

US-CL-CURRENT: 504/136; 544/312

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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**Search Results - Record(s) 11 through 20 of 33 returned.**☒ 11. Document ID: US 6165939 A

L17: Entry 11 of 33

File: USPT

Dec 26, 2000

US-PAT-NO: 6165939

DOCUMENT-IDENTIFIER: US 6165939 A

TITLE: Concentrate herbicidal composition

DATE-ISSUED: December 26, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Agbajè; Henry E.	St. Louis	MO		
Brinker; Ronald J.	Ellisville	MO		
Carter; Deborah J.	Wildwood	MO		

US-CL-CURRENT: 504/105; 504/107, 504/128

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMIC

☒ 12. Document ID: US 5990047 A

L17: Entry 12 of 33

File: USPT

Nov 23, 1999

US-PAT-NO: 5990047

DOCUMENT-IDENTIFIER: US 5990047 A

TITLE: Herbicidal composition comprising  
4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]benzoi c esters

DATE-ISSUED: November 23, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hacker; Erwin	Hochheim			DE
Hess; Martin	Mainz-Bretzenheim			DE
Kehne; Heinz	Hofheim			DE

US-CL-CURRENT: 504/134; 504/127, 504/129, 504/130, 504/133, 504/135, 504/136,  
504/138, 504/141, 504/142, 504/143, 504/144, 504/145, 504/146, 504/147, 504/148,  
504/149, 504/363, 504/367

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KMIC

☐ 13. Document ID: US 5990046 A

L17: Entry 13 of 33

File: USPT

Nov 23, 1999

US-PAT-NO: 5990046

DOCUMENT-IDENTIFIER: US 5990046 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Herbicidal compositions comprising dimethenamid and diketone or triketone herbicides

DATE-ISSUED: November 23, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fenderson; John M.	Kiowa	KS		
O'Neal; William B.	Buffalo Grove	IL		
Quaghebeur; Theo	Saint-Symphorien			BE
Schumm; Karl-Christoph	Campinas			BR
Van Loocke; Walter	Meetkerke			BE

US-CL-CURRENT: 504/129; 504/134

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

RMC

☐ 14. Document ID: US 5928996 A

L17: Entry 14 of 33

File: USPT

Jul 27, 1999

US-PAT-NO: 5928996

DOCUMENT-IDENTIFIER: US 5928996 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Synergistic herbicidal compositions of dimethenamid and dinitroaniline herbicides

DATE-ISSUED: July 27, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fenderson; John M.	Kiowa	KS		
O'Neal; William B.	Buffalo Grove	IL		
Quaghebeur; Theo	Saint-Symphorien			BE
Schumm; Karl-Christopher	Campinas			BR
Loocke; Walter Van	Meetkerke			BE

US-CL-CURRENT: 504/129

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

RMC



☒ 15. Document ID: US 5925596 A

L17: Entry 15 of 33

File: USPT

Jul 20, 1999

US-PAT-NO: 5925596

DOCUMENT-IDENTIFIER: US 5925596 A

TITLE: Substituted aminomethylphenylsulfonyleureas their preparation and their use as herbicides and plant growth regulators

DATE-ISSUED: July 20, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lorenz; Klaus	Weiterstadt			DE
Willms; Lothar	Hofheim			DE
Bauer; Klaus	Hanua			DE
Bieringer; Hermann	Eppstein			DE
Rosinger; Christopher	Hofheim			DE

US-CL-CURRENT: 504/134, 504/136, 504/139, 504/220, 504/227, 504/228, 504/231,  
504/233, 504/239, 504/240, 504/241, 504/243, 504/244, 504/259, 504/262, 544/199,  
544/205, 544/213, 544/220, 544/278, 544/280, 544/298, 544/311, 544/320, 546/288,  
546/289, 548/255

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC

☐ 16. Document ID: US 5922643 A

L17: Entry 16 of 33

File: USPT

Jul 13, 1999

US-PAT-NO: 5922643

DOCUMENT-IDENTIFIER: US 5922643 A

TITLE: Herbicidal compositions comprising dimethenamid and aryloxyphenoxy herbicides

DATE-ISSUED: July 13, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fenderson; John M.	Kiowa	KS		
O'Neal; William B.	Buffalo Grove	IL		
Quaghebeur; Theo	Saint-Symphorien			BE
Schumm; Karl-Christoph	Campinas			BR
Van Looche; Walter	Meetkerke			BE

US-CL-CURRENT: 504/129, 504/131, 504/136, 504/138

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC

☐ 17. Document ID: US 5908809 A

L17: Entry 17 of 33

File: USPT

Jun 1, 1999

US-PAT-NO: 5908809

DOCUMENT-IDENTIFIER: US 5908809 A

TITLE: Synergistic herbicidal compositions of dimethenamid and uracil herbicides

DATE-ISSUED: June 1, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fenderson; John M.	Kiowa	KS	67070	
O'Neal; William B.	Buffalo Grove	IL	60089	
Quaghebeur; Theo	B-7030 Saint-Symphorien			BE
Schumm; Karl-Christoph	13.044-230 Campinas - 5P			BR
Van Loocke; Walter	B-8377 Meetkerke			BE

US-CL-CURRENT: 504/136

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 18. Document ID: US 5900389 A

L17: Entry 18 of 33

File: USPT

May 4, 1999

US-PAT-NO: 5900389

DOCUMENT-IDENTIFIER: US 5900389 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Synergistic herbicidal compositions of dimethenamid and urea herbicides

DATE-ISSUED: May 4, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fenderson; John M.	Kiowa	KS	67070	
O'Neal; William B.	Buffalo Grove	IL	60089	
Quaghebeur; Theo	B-7030 Saint-Symphorien			BE
Schumm; Karl-Christoph	13.044-230 Campinas--5P			BR
Loocke; Walter Van	B-8377 Meetkerke			BE

US-CL-CURRENT: 504/129; 504/130, 504/131

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 19. Document ID: US 5900388 A

L17: Entry 19 of 33

File: USPT

May 4, 1999

US-PAT-NO: 5900388  
DOCUMENT-IDENTIFIER: US 5900388 A  
\*\* See image for Certificate of Correction \*\*

TITLE: Synergistic compositions of dimethenamide and cyclohexanedion herbicides

DATE-ISSUED: May 4, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fenderson; John M.	Kiowa	KS	67070	
O'Neal; William B.	Buffalo Grove	IL	60089	
Quaghebeur; Theo	B-7030 Saint-Symphorien			BE
Schumm; Karl-Christoph	13.044-230 Campinas			BE
Van Loocke; Walter	B-8377 Meetkerke			BE

US-CL-CURRENT: 504/129

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 20. Document ID: US 5888936 A

L17: Entry 20 of 33

File: USPT

Mar 30, 1999

US-PAT-NO: 5888936  
DOCUMENT-IDENTIFIER: US 5888936 A

TITLE: Synergistic herbicidal compositions of dimethenamid and phenmedipham

DATE-ISSUED: March 30, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fenderson; John M.	Kiowa	KS		
O'Neal; William B.	Buffalo Grove	IL		
Quaghebeur; Theo	Saint-Symphorien			BE
Schumm; Karl-Christoph	Campinas			BR
Van Loocke; Walter	Meetkerke			BE

US-CL-CURRENT: 504/129

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

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**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 21 through 30 of 33 returned.**☐ 21. Document ID: US 5888935 A

L17: Entry 21 of 33

File: USPT

Mar 30, 1999

US-PAT-NO: 5888935

DOCUMENT-IDENTIFIER: US 5888935 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Synergistic herbicidal compositions of dimethenamid and glyphosate

DATE-ISSUED: March 30, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fenderson; John M.	Kiowa	KS		
O'Neal; William B.	Buffalo Grove	IL		
Quaghebeur; Theo	Saint-Symphorien			BE
Schumm; Karl-Christoph	Campinas			BR
Van Loocke; Walter	Meetkerke			BE

US-CL-CURRENT: 504/128

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KINC

☐ 22. Document ID: US 5888933 A

L17: Entry 22 of 33

File: USPT

Mar 30, 1999

US-PAT-NO: 5888933

DOCUMENT-IDENTIFIER: US 5888933 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Potentiating herbicidal compositions of auxin inhibitors and aryloxyphenoxy herbicides

DATE-ISSUED: March 30, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Anderson; Richard J.	Palo Alto	CA	94303	
Cloudsdale; Ian S.	Boulder Creek	CA	95006	
Lamoreaux; Robert J.	San Juan Batista	CA	94045	
Schaefer; Kristine	Adel	IA	50003	
Harr; Jost	CH-4104 Oberwil			CH

US-CL-CURRENT: 504/130; 504/129, 504/136, 504/138, 504/144, 504/145, 504/146

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMMC

☒ 23. Document ID: US 5888931 A

L17: Entry 23 of 33

File: USPT

Mar 30, 1999

US-PAT-NO: 5888931

DOCUMENT-IDENTIFIER: US 5888931 A

TITLE: Potentiating herbicidal compositions of auxin transport inhibitors and substituted urea herbicides

DATE-ISSUED: March 30, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Anderson; Richard J.	Palo Alto	CA	94303	
Cloudsdale; Ian S.	Boulder Creek	CA	95006	
Lamoreaux; Robert J.	San Juan Batista	CA	94045	
Schaefer; Kristine	Adel	IA	50003	
Harr; Jost	CH-4104 Oberwil			CH

US-CL-CURRENT: 504/130; 504/129, 504/138, 504/139, 504/144, 504/148

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMMC

☐ 24. Document ID: US 5877116 A

L17: Entry 24 of 33

File: USPT

Mar 2, 1999

US-PAT-NO: 5877116

DOCUMENT-IDENTIFIER: US 5877116 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Pontentiating herbicidal compositions of auxin transport inhibitors and bipyridilium herbicides

DATE-ISSUED: March 2, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Anderson; Richard J.	Palo Alto	CA	94303	
Cloudsdale; Ian S.	Boulder Creek	CA	95006	
Lamoreaux; Robert J.	San Juan Batista	CA	94045	
Schaefer; Kristine	Adel	IA	50003	
Harr; Jost	CH-4104 Oberwil			CH

US-CL-CURRENT: 504/130; 504/136, 504/138, 504/144

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMIC

☐ 25. Document ID: US 5877115 A

L17: Entry 25 of 33

File: USPT

Mar 2, 1999

US-PAT-NO: 5877115

DOCUMENT-IDENTIFIER: US 5877115 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Dicamba and dimethenamid synergistic herbicidal compositions

DATE-ISSUED: March 2, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fenderson; John M.	Kiowa	KS		
O'Neal; William B.	Buffalo Grove	IL		
Quaghebeur; Theo	Saint-Symphorien			BE
Schumm; Karl-Christoph	Campinas			BR
Loocke; Walter Van	Meetkerke			BE

US-CL-CURRENT: 504/129; 504/144

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMIC

☐ 26. Document ID: US 5877114 A

L17: Entry 26 of 33

File: USPT

Mar 2, 1999

US-PAT-NO: 5877114

DOCUMENT-IDENTIFIER: US 5877114 A

TITLE: Potentiating herbicidal compositions of auxin transport inhibitors and glyphosate

DATE-ISSUED: March 2, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Anderson; Richard J.	Palo Alto	CA	94303	
Cloudsdale; Ian S.	Boulder Creek	CA	95006	
Lamoreaux; Robert J.	San Juan Batista	CA	94045	
Schaefer; Kristine	Adel	IA	50003	
Harr; Jost	CH-4104 Oberwil			CH

US-CL-CURRENT: 504/128; 504/127, 504/130, 504/138, 504/144

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMIC

☐ 27. Document ID: US 5798316 A

L17: Entry 27 of 33

File: USPT

Aug 25, 1998

US-PAT-NO: 5798316

DOCUMENT-IDENTIFIER: US 5798316 A

TITLE: Herbicidal combinations containing  
2-[(4-heterocyclic-phenoxy)methyl]phenoxy]alkanoates

DATE-ISSUED: August 25, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Theodoridis; George	Princeton	NJ	08540	

US-CL-CURRENT: 504/136

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 28. Document ID: US 5759955 A

L17: Entry 28 of 33

File: USPT

Jun 2, 1998

US-PAT-NO: 5759955

DOCUMENT-IDENTIFIER: US 5759955 A

TITLE: Herbicidal agents based on heteroaryloxyacetamides

DATE-ISSUED: June 2, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Santel; Hans-Joachim	Leverkusen			DE
Feucht; Dieter	Monheim			DE

US-CL-CURRENT: 504/132; 504/134, 504/136, 504/137, 504/139

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 29. Document ID: US 5721191 A

L17: Entry 29 of 33

File: USPT

Feb 24, 1998

US-PAT-NO: 5721191

DOCUMENT-IDENTIFIER: US 5721191 A

TITLE: Synergistic herbicidal compositions of dimethenamid and sulfonylureas

DATE-ISSUED: February 24, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fenderson; John M.	Kiowa	KS		
O'Neal; William B.	Buffalo Grove	IL		
Quaghebeur; Theo	Saint-Symphorien			BE
Schumm; Karl-Christoph	Campinas			BR
Van Looke; Walter	Meetkerke			BE

US-CL-CURRENT: 504/134; 504/136

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw	Desc	Image							

KMC

☒ 30. Document ID: US 5714157 A

L17: Entry 30 of 33

File: USPT

Feb 3, 1998

US-PAT-NO: 5714157

DOCUMENT-IDENTIFIER: US 5714157 A

TITLE: Water-dispersible granular agricultural compositions made by heat extrusion

DATE-ISSUED: February 3, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sandell; Lionel Samuel	Wilmington	DE		
Wysong; Robert David	Wilmington	DE		

US-CL-CURRENT: 424/409; 424/405, 424/408, 424/419, 504/367

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw	Desc	Image							

KMC

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Terms	Documents
113 and L16	33

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☐ 31. Document ID: US 5683960 A

Nov 4, 1997

DATE-ISSUED: November 4, 1997

NAME	CITY	STATE	ZIP CODE	COUNTRY
Anderson; Richard J.	Palo Alto	CA		
Cloudsdale; Ian S.	Boulder Creek	CA		
Lamoreaux; Robert J.	San Juan Batista	CA		
Schaefer; Kristine	Adel	IA		
Harr; Jost	Oberwil			CH

US-CL-CURRENT: 504/129; 504/130, 504/138, 504/144, 504/149

[illegible]

☐ 32. Document ID: US 5674810 A

Oct 7, 1997

DATE-ISSUED: October 7, 1997

NAME	CITY	STATE	ZIP CODE	COUNTRY
Theodoridis, George	Princeton	NJ		

US-CL-CURRENT: 504/136

[illegible]

☒ 33. Document ID: US 5372989 A

L17: Entry 33 of 33

File: USPT

Dec 13, 1994

US-PAT-NO: 5372989

DOCUMENT-IDENTIFIER: US 5372989 A

**\*\* See image for Certificate of Correction \*\***TITLE: Water-dispersible or water-soluble pesticide grandules from heat-activated binders

DATE-ISSUED: December 13, 1994

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Geigle, William L.	Downs	IL		
Sandell, Lionel S.	Wilmington	DE		
Wysong, Robert D.	Talleyville	DE		

US-CL-CURRENT: 504/367; 424/409, 504/212, 504/268, 504/323

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	RMC
Draw Desc	Image										

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Terms	Documents
113 and L16	33

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L17: Entry 4 of 33

File: PGPB

Jan 30, 2003

DOCUMENT-IDENTIFIER: US 20030022792 A1

TITLE: HERBICIDAL COMPOSITIONS FOR TOLERANT OR RESISTANT CEREAL CROPS

Current US Classification, US Secondary Class/Subclass (1):504/128Summary of Invention Paragraph (259):

[0257] Compounds (A) and (B) or their combinations can be formulated in different ways, depending on the biological and/or chemico-physical parameters which prevail. The following are examples of general possibilities for formulations: wettable powders (WP), emulsifiable concentrates (EC), aqueous solutions (SL), emulsions (EW) such as oil-in-water and water-in-oil emulsions, sprayable solutions or emulsions, oil- or water-based dispersions, suspensions, dusts (DP), seed-dressing materials, granules for soil application or for broadcasting, or water dispersible granules (WG), ULV formulations, microcapsules or waxes.

Summary of Invention Paragraph (263):

[0261] Wettable powders (sprayable powders) are products which are uniformly dispersible in water and which, besides the active substance, also comprise ionic or non-ionic surfactants (wetters, dispersants), for example polyoxethylated alkylphenols, polyethoxylated fatty alcohols or fatty amines, alkanesulfonates or alkylbenzenesulfonates, sodium lignosulfonate, sodium 2,2'-dinaphthylmethane-6,6'-disulfonate, sodium dibutyl-naphthalenesulfonate or else sodium oleoylmethyltauride, in addition to a diluent or inert material.

Summary of Invention Paragraph (266):

[0264] Granules can be prepared either by spraying the active substance onto adsorptive, granulated inert material or by applying active substance concentrates to the surface of carriers such as sand, kaolites or granulated inert material with the aid of binders, for example polyvinyl alcohol, sodium polyacrylate or else mineral oils. Suitable active substances may also be granulated in the manner conventionally used for the production of fertilizer granules, if desired in a mixture with fertilizers. As a rule, water-dispersible granules are prepared by processes such as spray drying, fluidized-bed granulation, disk granulation, mixing with high-speed mixers and extrusion without solid inert material.

Summary of Invention Paragraph (270):

[0268] In the case of granules such as dispersible granules, the active substance content depends partly on whether the active compound is present in liquid or solid form and on which granulation auxiliaries and fillers are being used. As a rule, the content amounts to between 10 and 90% by weight in the case of the water-dispersible granules.

Summary of Invention Paragraph (273):

[0271] For use, the formulations, which are present in commercially available form, are optionally diluted in the customary manner, for example using water in the case of wettable powders, emulsifiable concentrates, dispersions and water-dispersible granules. Preparations in the form of dusts, soil granules, granules for broadcasting and sprayable solutions are usually not diluted further prior to use with other inert substances.

Detail Description Paragraph (3):

[0276] b) A wettable powder which is readily dispersible in water is obtained by mixing 25 parts by weight of an active substance/active substance mixture, 64 parts by weight of kaolin-containing quartz as inert material, 10 parts by weight of potassium lignosulfonate and 1 part by weight of sodium oleoylmethyltaurate as wetter and dispersant, and grinding the mixture in a pinned-disk mill.

Detail Description Paragraph (6):

[0279] e) Water-dispersible granules are obtained by mixing

Detail Description Paragraph (13):

[0286] f) Water-dispersible granules are also obtained by homogenizing and precomminuting, on a colloid mill,

CLAIMS:

4. The use as claimed in claim 1, wherein one or more herbicides from the group consisting of (B0) one or more structurally different herbicides from the abovementioned group (A), (B1) foliar-acting and/or soil-acting (residual action) herbicides which are effective selectively in cereals, particularly against monocotyledonous harmful plants from the group consisting of isoproturon, chlorotoluron, fluthiamide, prosulfocarb, pendimethalin, fenoxaprop-P, fenoxaprop, clodinafop, diclofop, tralkoxydim, imazamethabenz and flupyrsulfuron, (B2) predominantly foliar-acting herbicides which are effective selectively in cereals against monocotyledonous and dicotyledonous harmful plants from the group consisting of metsulfuron, triasulfuron, AEF060 iodosulfuron, chlorsulfuron and sulfosulfuron or (B3) foliar- and soil-acting herbicides which are effective selectively in cereals against dicots and monocots, from the group consisting of diflufenican/flurtamone, metosulam and flumetsulam or (B4) foliar-acting herbicides which are effective selectively in cereals against monocotyledonous and dicotyledonous harmful plants, from the group consisting of (B4.1) tribenuron, amidosulfuron, LAB271272 thifensulfuron, prosulfuron and cinidon-ethyl and (B4.2) herbicides of the growth hormone type from the group consisting of 2,4-D, CMPP-P, dichlorprop, MCPA, fluroxypyr, dicamba picloram, bentazone and clopyralid and (B4.3) hydroxybenzonitriles/photosynthesis inhibitors from the group consisting of bromoxynil, ioxynil, bifenoxy and metribuzin or (B4.4) PPO inhibitors from the group consisting of carfentrazone, pyraflufen and fluoroglycofen or (B4.5) HPPDO inhibitors from the group consisting of piclonifen, aclonifen, isoxaflutole, clomazone, sulcotrione and mesotrione or of herbicides of several of groups (B0) to (B4) are present as component (B).

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L17: Entry 6 of 33

File: USPT

May 6, 2003

DOCUMENT-IDENTIFIER: US 6559098 B1

TITLE: Sulphonylurea and/adjutant based solid mixtures

Brief Summary Text (25):

Some suitable SU together with their INN (International Nonproprietary Name) in accordance with Pesticide Manual may be mentioned below: ACC 322140; amidosulfuron; azimsulfuron

(N-[[[(4,6-dimethoxy-2-pyrimidinyl)amino]-carbonyl]-1-methyl-4-(2-methyl-2H-tetrazol-5-yl)-1H-pyrazole-5-sulfonamide]; bensulfuron-methyl (methyl

2-[[[[[(4,6-dimethoxy-2-pyrimidinyl)-amino]-carbonyl]amino]sulfonyl]methyl]benzoate); ethyl

2-[[[[[(4-chloro-6-methoxy-2-pyrimidinyl)-amino]carbonyl]amino]sulfonyl]benzoate (chlorimuron-ethyl);

2-chloro-N-[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)amino]-carbonyl]benzenesulfonamide (chlorosulfuron); chlorosulfoxim; cinosulfuron; cyclosulfamuron; ethametsulfuron-methyl (methyl

2-[[[[[(4-ethoxy-6-(methylamino)-1,3,5-triazin-2-yl)amino]carbonyl]amino]sulfonyl]benzoate); ethoxysulfuron; fluazasulfuron; flupyrsulfuron (methyl

2-[[[[[(4,6-dimethoxy-2-pyrimidinyl)-amino]carbonyl]amino]sulfonyl]-6-(trifluoromethyl)-3-pyridinecarboxylate); halosulfuron-methyl imazosulfuron; methyl

2-[[[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)amino]-carbonyl]amino]sulfonyl]benzoate (metsulfuron-methyl); nicosulfuron

(2-[[[[[(4,6-dimethoxy-2-pyrimidinyl)amino]-carbonyl]amino]sulfonyl]-N,N-dimethyl-3-pyridinecarboxamide); oxasulfuron; primisulfuron (methyl

2-[[[[[(4,6-bis(difluoromethoxy)-2-pyrimidinyl)amino]carbonyl]amino]sulfonyl]benzoate); prosulfuron; pyrazosulfuron-ethyl (ethyl

5-[[[[[(4,6-dimethoxy-2-pyrimidinyl)-amino]carbonyl]amino]sulfonyl]-1-methyl-1H-pyrazole-4-carboxylate); rimsulfuron

(N-[[[(4,6-dimethoxy-2-pyrimidinyl)amino]carbonyl]-3-(ethylsulfonyl)-2-pyridinesulfonamide); sulfosulfuron; sulfometuron-methyl (methyl

2-[[[[[(4,6-dimethyl-2-pyrimidinyl)-amino]carbonyl]amino]sulfonyl]benzoate); thifensulfuron-methyl

(methyl-3-[[[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)amino]carbonyl]amino]sulfonyl]-2-thiophene-carboxylate);

2-(2-chloroethoxy)-N-[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-amino]carbonyl]benzenesulfonamide (triasulfuron); tribenuron-methyl (methyl

2-[[[[[N-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-N-methylamino]carbonyl]amino]sulfonyl]benzoate); and triflusulfuron-methyl (Methyl

2-[[[[[(4-(dimethylamino)-6-(2,2,2-trifluoroethoxy)-1,3,5-triazin-2-yl)amino]carbonyl]-amino]sulfonyl]-3-methylbenzoate).

Brief Summary Text (53):

The solid mixtures according to the invention can be prepared in the form of powders, granules, briquettes, tablets and similar formulation variants. In addition to powders, granules are especially preferred. The powders may be water-soluble or water-dispersible powders. The granules may be water-soluble or water-dispersible granules for use in spray application, or so-called spreading granules for direct application. The mean particle size of the granules is generally between 200 .mu.m and 2 mm.

Detailed Description Paragraph Table (15):

TABLE 2 Name Chemical name Manufacturer Tamol .RTM. NH Naphthalenesulfonic BASF AG

acid/formaldehyde condensate Ufoxane .RTM. 3A Sodium ligno- Borregaard sulfonate  
Morwet .RTM. D425 Naphthalenesulfonic BASF AG acid/formaldehyde condensate Wettol  
.RTM. NT 1 Alkylnaphthalene- BASF AG sulfonate Extrusil .RTM. Highly disperse  
Degussa calcium silicate Sipernat .RTM. 22 Highly disperse Degussa silica  
Antischaummittel SRE Silicone oil Wacker-Chemie emulsion Lutensol .RTM. ON 30 Fatty  
alcohol BASF AG ethoxylate (3EO) Lutensol .RTM. ON 60 Fatty alcohol BASF AG  
ethoxylate (6EO) Lutensol .RTM. ON 80 Fatty alcohol BASF AG ethoxylate (8EO)  
Lutensit .RTM. A-PS Sodium alkane- BASF AG sulfonate Lutensit .RTM. A-LBN Sodium  
alkylbenzene- BASF AG sulfonate Armoblem .RTM. 557 Ethoxylated fatty Akzo amine  
Klearfac .RTM. AA-270 Phosphated fatty BASF Corporation alcohol ethoxylate Morwet  
.RTM. EFW Anionic wetter blend Witco Witconate 3203 Sodium alpha-olefin- Witco  
sulfonate Witconate NAS 8 Sodium alkane- Witco sulfonate Aerosol OT-B Sodium  
dioctylsulfo- American Cyanamid succinate SU 1 Comp. 47 of Table 1 Clefoxydim  
2-{1-[2-(4-chloro- phenoxy)propyloxy- mino]butyl}-5-tetra- hydrothiopyran-3-yl-  
cyclohexane- 1,3-dione Cinidon-ethyl ethyl (Z)-2-chloro- 3-[2-chloro-5-  
(4,5,6,7-tetra- hydro-1,3-dioxoiso- indoledion-2-yl)- phenyl]acrylate

Current US Cross Reference Classification (1):

504/133

Current US Cross Reference Classification (3):

504/136

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L17: Entry 7 of 33

File: USPT

Dec 10, 2002

DOCUMENT-IDENTIFIER: US 6492301 B1

TITLE: Herbicidal compositions with substituted phenylsulfonylureas for controlling weeds in rice

Brief Summary Text (19):

D3 discloses, in particular, combinations of the sulfonylurea of the formula 3 with fenoxaprop, fenoxaprop-P, isoproturon, diclofop, clodinafop, mixtures of clodinafop and cloquintocet, chlortoluron, methabenzthiazuron, imazamethabenz, tralkoxydim, difenzoquat, flamprop, flamprop-M, pendimethalin, nicosulfuron, rimsulfuron, primisulfuron, mecoprop, mecoprop-P, MCPA, dichlorprop, dichlorprop-P, 2,4-D, dicamba, fluroxypyr, ioxynil, bromoxynil, bifenox, fluoroglycofen, acifluorfen, lactofen, fomesafen, oxyfluorfen, ET-751, azoles according to WO/08999, diflufenican, bentazon, metolachlor, metribuzin, atrazin, terbuthylazin, alachlor, acetochlor, dimethenamid, amidosulfuron, metsulfuron, tribenuron, thifensulfuron, triasulfuron, chlorsulfuron, prosulfuron or CGA-152005, sulfonylureas according to WO 94/10154, flupyrsulfuron (DPX-KE459), sulfosulfuron (MON37500), KIH-2023, glufosinate, glufosinate-P or glyphosate.

Brief Summary Text (22):

In particular, combinations with fenoxaprop, fenoxaprop-P, isoproturon, diclofop, clodinafop, mixtures of clodinafop and cloquintocet, chlortoluron, methabenzthiazuron, imazamethabenz, tralkoxydim, difenzoquat, flamprop, flamprop-M, pendimethalin, mecoprop, mecoprop-P, MCPA, dichlorprop, dichlorprop-P, 2,4-D, dicamba, fluroxypyr, ioxynil, bromoxynil, bifenox, fluoroglycofen, lactofen, fomesafen, oxyfluorfen, ET-751, azoles according to WO 94/08999, F 8426, diflufenican, bentazon, metribuzin, metosulam, flupoxam, prosulfocarb, flurtamone, amidosulfuron, metsulfuron, tribenuron, thifensulfuron, triasulfuron, chlorsulfuron, sulfonylureas according to WO 94/10154, sulfonylureas according to WO 92/13845, flupyrsulfuron (DPX-KE459), MON 48500, sulfosulfuron (MON37500), glufosinate, glufosinate-P or glyphosate are known.

Brief Summary Text (96):

In a further preferred embodiment of the invention, the herbicidally active combinations comprise, as herbicides of type B, one or more herbicides which are selective in rice against grasses and dicotyledonous plants and cyperaceae from the group consisting of ##STR75##

2-(4-methoxy-6-methyl-1,3,5-triazin-2-ylcarbamoyl-sulfamoyl)benzoic acid, usually employed as metsulfuron-methyl, Pesticide Manual, 10th Ed. 1994, pp.701-702,

##STR76##

2-[[[(4,6-dimethoxy-2-pyrimidinyl)amino]carbonyl]-amino]sulfonyl]methyl]benzoic acid, including, in particular, the use as bensulfuronmethyl, i.e. as the methyl ester of bensulfuron, where the compounds B58) are known, inter alia, from Pesticide Manual, 10th Ed. 1994, pp.85-87, ##STR77##

5-[[[(4,6-dimethoxy-2-pyrimidinyl)amino]carbonyl]-amino]sulfonyl]-1-methyl-1H-pyrazol-4-carboxylic acid including, inter alia, as most important use form the ethyl ester, pyrazosulfuron-ethyl, where the compounds B59) are known, inter alia, from Pesticide Manual, 10th Ed. 1994, pp.873-874; ##STR78##

N-[[[(4,6-dimethoxy-1,3,5-triazin-2-yl)amino]carbonyl]-2-(2-methoxyethoxy)benzolsulfonamide, where the compound B60) is known, inter alia, from Pesticide Manual, 10th Ed. 1994, pp.211-212, ##STR79##

2-chloro-N-[[[(4,6-dimethoxy-2-pyrimidinyl)amino]-carbonyl]imidazo[1,2-a]pyridine-3-sulfonamide, where the compound B61) is known, inter alia, from Pesticide

Manual, 10th Ed. 1994, pp.589-599, ##STR80##

N-[[[2-(cyclopropylcarbonyl)phenyl]amino]sulfonyl]-N.sup.1

-(4,6-dimethoxypyrimidin-2-yl)urea, where the compound B62) is known, inter alia, from Pesticide Manual, 10th Ed. 1994, pp.8-9, ##STR81## in which a) R.sup.1 is ethoxy, propoxy or isopropoxy and R.sup.2 is halogen, NO.sub.2, CF.sub.3, CN, (C.sub.1 -C.sub.4)-alkyl, (C.sub.1 -C.sub.4)-alkoxy, (C.sub.1 -C.sub.4)-alkylthio or ((C.sub.1 -C.sub.4)alkoxy)carbonyl and n is 0, 1, 2 or 3 or b) R.sup.1 is saturated or unsaturated (C.sub.1 -C.sub.8)-alkoxy, which is substituted by halogen, saturated or unsaturated (C.sub.1 -C.sub.6)-alkoxy, a radical of the formula ((C.sub.1 -C.sub.6)-alkyl)-S--, ((C.sub.1 -C.sub.6)-alkyl)-SO--, ((C.sub.1 -C.sub.6)-alkyl)-SO.sub.2 --, ((C.sub.1 -C.sub.6)-alkyl)-O--CO--, NO.sub.2, CN or phenyl; furthermore (C.sub.2 -C.sub.8)-alkenyloxy or -alkynyloxy and R.sup.2 is saturated or unsaturated (C.sub.1 -C.sub.8)-alkyl, phenyl, phenoxy, (C.sub.1 -C.sub.4)-alkoxy, (C.sub.1 -C.sub.4)-alkylthio, ((C.sub.1 -C.sub.4)-alkoxy)carbonyl, where all of the abovementioned radicals R.sup.2 may be substituted by halogen, (C.sub.1 -C.sub.4)-alkoxy or (C.sub.1 -C.sub.4)-alkylthio, or halogen, NO.sub.2, (C.sub.1 -C.sub.4)-alkylsulfonyl or -sulfinyl and n is 0, 1, 2 or 3 or c) R.sup.1 is (C.sub.1 -C.sub.8)-alkoxy and R.sup.2 is (C.sub.2 -C.sub.8)-alkenyl or -alkynyl, phenyl, phenoxy, where the radicals mentioned above for R.sup.2 are unsubstituted or substituted by halogen, (C.sub.1 -C.sub.4)-alkoxy or (C.sub.1 -C.sub.4)-alkylthio, or (C.sub.1 -C.sub.4)-alkylsulfonyl or -sulfinyl and n is 1, 2 or 3 or d) R.sup.1 is, in each case in the 2-position on the phenyl radical, halogen, methoxy, ethyl or propyl, R.sup.2 is ((C.sub.1 -C.sub.4)-alkoxy)carbonyl in the 6-position on the phenyl radical and n=1 and in all cases a) to d) R.sup.3 is hydrogen, saturated or unsaturated (C.sub.1 -C.sub.8)-alkyl or (C.sub.1 -C.sub.4)-alkoxy, R.sup.4 ' R.sup.5 independently of one another are hydrogen, halogen, (C.sub.1 -C.sub.4)-alkyl, (C.sub.1 -C.sub.4)-alkoxy, (C.sub.1 -C.sub.4)-alkylthio, where the three last-mentioned radicals are unsubstituted or substituted by halogen, (C.sub.1 -C.sub.4)-alkoxy or (C.sub.1 -C.sub.4)-alkylthio, Y is O or S and E is CH or N,

#### Brief Summary Text (124):

at least one herbicidally active compound from the group of the compounds B' consisting of B1)butachlor, B2)butenachlor, B3)thenylchlor, B4)pretilachlor, B5)mefenacet, B5a)Bay FOE 5043, B6)naproanilid, B7)propanil, B8)etobenzanid, B9)dimepiperate, B10)molinate, B11)thiobencarb, B12)pyributicarb, B13)quinclorac, B14a)sulcotrione, B15)cycloxydim B16)sethoxydim B17)NBA 061, B18)piperophos, B19)anilofos, B21)haloxyfop, B22)cyhalofop, B23)JC-940, B24)dithiopyr, B25)bromobutide, B26)cinmethylin, B27)CH-900, B32)acifluorfen, B34)chlorimuron, B37)picloram, B38)carfentrazone B40)triclopyr, B41)benfuresate, B42)daimuron, B44)clomazon, B45)benzofenap, B46)pyrazolynate, B47)pyrazoxyfen, B49)KIH 6127, B50)oxadiazon, B51)oxadiargyl, B56)dalapon, B58)bensulfuron, B59)pyrazosulfuron, B60)cinosulfuron, B61)imazosulfuron, B62)AC 322,140 (cyclosulfamuron), B63a)ethoxysulfuron (HOE 095404), B64)azimsulfuron (DPX-A8947), B66)prometryn, B67)simetryn, B68)thiazopyr, B69)pyrazophos, B70)pentoxazone, B71)indanofan, B72)LGC 40863

#### Brief Summary Text (126):

or in combination with two or more herbicidally active compounds from the group of the compounds B". B1)butachlor, B2)butenachlor, B3)thenylchlor, B4)pretilachlor, B5)mefenacet, B5a)bay FOE 5043, B6)naproanilid, B7)propanil, B8)etobenzanid, B9)dimepiperate, B10)molinate, B11)thiobencarb, B12)pyributicarb, B13)quinclorac, B14a)sulcotrione, B15)cycloxydim B16)sethoxydim B17)NBA 061, B18)piperophos, B19)anilofos, B20)fenoxaprop, fenoxaprop-P, B21)haloxyfop, B22)cyhalofop, B23)JC-940, B24)dithiopyr, B25)bromobutide, B26)cinmethylin, B27)CH-900, B28)2,4-D, B29)mecoprop, mecoprop-P, B30)MCPA, B31)dicamba, B32)acifluorfen, B33a) ##STR93## B34)chlorimuron, B35)triasulfuron, B36)ioxynil, B37)picloram, B38)carfentrazone, B39)bentazon, B40)triclopyr, B41)benfuresate, B42)daimuron, B43)pendimethalin, B44)clomazon, B45)benzofenap, B46)pyrazolynate, B47)pyrazoxyfen, B48)KIH 2023, B49)KIH 6127, B50)oxadiazon, B51)oxadiargyl, B52)acetochlor, B53)metolachlor, B54)metosulam, B55)oxyfluorfen B56) dalapon, B57)metsulfuron, B58)bensulfuron, B59)pyrazosulfuron, B60)cinosulfuron, B61)imazosulfuron, B62)AC 322,140 (cyclosulfamuron), B63a)ethoxysulfuron (HOE 095404), B64)azimsulfuron (DPX-A8947), B65)nicosulfuron, B66) prometryn, B67)simetryn, B68)thiazopyr, B69)pyrazophos, B70)pentoxazone, B71)indanofan, B72)LGC 40863 and B73)MY 100

#### Brief Summary Text (131):



Wettable powders (WP), emulsifiable concentrates (EC), water-soluble powders (SP), water-soluble concentrates (SL), concentrated emulsions (EW), such as oil-in-water and water-in-oil emulsions, sprayable solutions or emulsions, capsule suspensions (CS), oil- or water-based dispersions (SC), suspoemulsions, suspension concentrates, dusts (DP), oil-miscible solutions, seed dressings, granules (GR) in the form of microgranules, spray granules, coated granules and absorption granules, granules for broadcasting and soil application, water-soluble granules (SG), water-dispersible granules (WG), ULV formulations, microcapsules and waxes.

Brief Summary Text (132):

Among these, preference is given to water-soluble wettable powders (WP), water-dispersible granules (WG), water-emulsifiable granules (EC), suspoemulsions (SE) and oil suspension concentrates (SC).

Brief Summary Text (136):

The herbicide combinations of the invention are prepared particularly advantageously by formulating the compounds of the formula I or salts thereof (type A compounds) with one or more compounds of type B similar to a conventional crop protection formulation from the group consisting of water-soluble wettable powders (WP), water-dispersible granules (WDG), water-emulsifiable granules (WEG), suspoemulsions (SE) and oil suspension concentrates (SC).

Brief Summary Text (137):

Wettable powders are preparations which are uniformly dispersible in water and which, besides the active compounds, also comprise ionic and/or nonionic surfactants (wetting agents, dispersants), for example polyethoxylated alkylphenols, polyethoxylated fatty alcohols, polyethoxylated fatty amines, fatty alcohol polyglycol ether sulfates, alkanesulfonates or alkylarylsulfonates, sodium lignosulfonate, sodium 2,2'-dinaphthylmethane-6,6"-disulfonate, sodium dibutyl-naphthalenesulfonate or else sodium oleoylmethyltaurinate, in addition to a diluent or inert substance.

Brief Summary Text (141):

Water-dispersible granules are generally prepared by the customary processes such as spray drying, fluidized-bed granulation, disk granulation, mixing with high-speed mixers and extrusion without solid inert material. It is also possible to granulate suitable active compounds in the manner customarily used for preparing fertilizer granules--if appropriate in a mixture with fertilizers.

Brief Summary Text (143):

The concentrations of the active compounds A+B in the formulations may vary. In wettable powders, the active compound concentration is, for example, approximately 10 to 95% by weight, the remainder to 100% by weight being composed of customary formulation components. In the case of emulsifiable concentrates, the active compound concentration may amount to approximately 1 to 85% by weight, preferably 5 to 80% by weight. Formulations in the form of dusts comprise approximately 1 to 25% by weight, in most cases 5 to 20% by weight, of active compounds, and sprayable solutions comprise approximately 0.2 to 25% by weight, preferably 2 to 20% by weight, of active compounds. The active compound content of granules such as dispersible granules depends partly on whether the active compound is in liquid or solid form and on which granulation auxiliaries and fillers are being used. In general, the content of the water-dispersible granules amounts to between 10 and 90% by weight.

Brief Summary Text (186):

For use, the formulations, which are in commercially available form, are, if appropriate, diluted in the customary manner, for example using water in the case of wettable powders, emulsifiable concentrates, dispersions and water-dispersible granules. Preparations in the form of dusts, granules for soil application or for broadcasting and sprayable solutions are usually not diluted further with additional inert substances prior to use.

Brief Summary Text (201):

and B) at least one herbicidally active compound from the group of the compounds consisting of Ba) herbicides which are selective in rice, mainly against grasses,

selected from the group consisting of B1)butachlor, B2)butenachlor, B3)thenylchlor, B4)pretilachlor, B5)mefenacet, B5a)Bay FOE 5043, B6)naproanilid, B7)propanil, B8)etobenzanid, B9)dimepiperate, B10)molinate, B11)thiobencarb, B12)pyributicarb, B13)quinclorac, B14a)sulcotrione, B15)cycloxydim, B16)sethoxydim, B17)NBA 061 fentrazamid, B18)piperophos, B19)anilofos, B20)fenoxaprop, fenoxaprop-P, B21)haloxyfop, B22)cyhalofop, B23)JC-940, B24)dithiopyr, B25)bromobutide, B26)cinmethylin and B27)CH-900, Bb) herbicides which are selective in rice, mainly against dicotyledonous harmful plants and cyperaceae, selected from the group consisting of B28)2,4-D, B29)mecoprop, mecoprop-P, B30)MCPA, B31)dicamba, B32)acifluorfen, B33a) ##STR103## B34)chlorimuron, B35)triasulfuron, B36)ioxynil, B37)picloram and B38)carfentrazon, Bc) herbicides which are selective in rice, mainly against cyperaceae selected from the group consisting of B39)bentazon, B40)triclopyr, B41)benfuresate and B42)daimuron, and Bd) herbicides which are selective in rice, mainly against grasses and dicotyledonous harmful plants and harmful cyperaceae plants, selected from the group consisting of B43)pendimethalin, B44)clomazon, B45)benzofenap, B46)pyrazolynate, B47)pyrazoxyfen, B48)KIH 2023, B49)KIH 6127, B50)oxadiazon, B51)oxadiargyl, B52)acetochlor, B53)metolachlor, B54)metosulam, B55)oxyfluorfen B56)dalapon, B57)metsulfuron, B58)bensulfuron, B59)pyrazosulfuron, B60)cinosulfuron, B61)imazosulfuron, B62)AC 322,140 (cyclosulfamuron), B63a)ethoxysulfuron (HOE 095404), B64)azimsulfuron (DPX-A8947), B65)nicosulfuron, B66)prometryn, B67)simetryn, B68)thiazopyr, B69)pyrazophos, B70)pentoxazone, B71)indanofan, B72)LGC 40863 and B73)MY 100,

#### Brief Summary Text (209):

Specific examples which may be mentioned for the claimed active compound mixtures having more than two active compounds from groups A and B are those below, without thereby imposing a limitation to only those combinations which have been mentioned explicitly: A1 and/or A1\*+B19 (anilofos)+B1 (butachlor); A1 and/or A1\*+B19 (anilofos)+B2 (butenachlor); A1 and/or A1\*+B19 (anilofos)+B3 (thenylchlor); A1 and/or A1\*+B19 (anilofos)+B4 (pretilachlor); A1 and/or A1\*+B19 (anilofos)+B5 (mefenacet); A1 and/or A1\*+B19 (anilofos)+B6 (naproanilid); A1 and/or A1\*+B19 (anilofos)+B7 (propanil); A1 and/or A1\*+B19 (anilofos)+B8 (etobenzanid); A1 and/or A1\*+B19 (anilofos)+B9 (dimepiperate); A1 and/or A1\*+B19 (anilofos)+B10 (molinate); A1 and/or A1\*+B19 (anilofos)+B11 (thiobencarb); A1 and/or A1\*+B19 (anilofos)+B12 (pyributicarb); A1 and/or A1\*+B19 (anilofos)+B13 (quinclorac); A1 and/or A1\*+B19 (anilofos)+B14a(sulcotrione); A1 and/or A1\*+B19 (anilofos)+B17 (Bayer NBA 061); A1 and/or A1\*+B19 (anilofos)+B18 (piperophos); A1 and/or A1\*+B19 (anilofos)+B20 (fenoxaprop and/or fenoxaprop-P); A1 and/or A1\*+B19 (anilofos)+B21 (haloxyfop); A1 and/or A1\*+B19 (anilofos)+B22 (DEH-112); A1 and/or A1\*+B19 (anilofos)+B23 (JC-940); A1 and/or A1\*+B19 (anilofos)+B24 (dithiopyr); A1 and/or A1\*+B19 (anilofos)+B25 (bromobutide); A1 and/or A1\*+B19 (anilofos)+B26 (cinmethylin); A1 and/or A1\*+B19 (anilofos)+B27 (CH-900); A1 and/or A1\*+B19 (anilofos)+B28 (2,4-D); A1 and/or A1\*+B19 (anilofos)+B29 (mecoprop and/or mecoprop-P); A1 and/or A1\*+B19 (anilofos)+B30 (MCPA); A1 and/or A1\*+B19 (anilofos)+B31 (dicamba); A1 and/or A1\*+B19 (anilofos)+B32 (acifluorfen); A1 and/or A1\*+B19 (anilofos)+B33a and/or B33b; A1 and/or A1\*+B19 (anilofos)+B39 (bentazon); A1 and/or A1\*+B19 (anilofos)+B40 (triclopyr); A1 and/or A1\*+B19 (anilofos)+B41 (benfuresate); A1 and/or A1\*+B19 (anilofos)+B42 (daimuron); A1 and/or A1\*+B19 (anilofos)+B43 (pendimethalin); A1 and/or A1\*+B19 (anilofos)+B44 (clomazon); A1 and/or A1\*+B19 (anilofos)+B45 (benzofenap); A1 and/or A1\*+B19 (anilofos)+B46 (pyrazolynate); A1 and/or A1\*+B19 (anilofos)+B47 (pyrazoxyfen); A1 and/or A1\*+B19 (anilofos)+B48 (KIH 2023); A1 and/or A1\*+B19 (anilofos)+B57 (metsulfuron); A1 and/or A1\*+B19 (anilofos)+B58 (bensulfuron); A1 and/or A1\*+B19 (anilofos)+B59 (pyrazosulfuron); A1 and/or A1\*+B19 (anilofos)+B60 (cinosulfuron); A1 and/or A1\*+B19 (anilofos)+B61 (imazosulfuron); A1 and/or A1\*+B19 (anilofos)+B62 (AC 322,140 (cyclosulfamuron)); A1 and/or A1\*+B19 (anilofos)+B63a (ethoxysulfuron (HOE 095404)); A1 and/or A1\*+B19 (anilofos)+B64 (azimsulfuron (DPX-A8947)); A1 and/or A1\*+B19 (anilofos)+B65 (nicosulfuron); A2 and/or A3+B19 (anilofos)+B1 (butachlor); A2 and/or A3+B19 (anilofos)+B2 (butenachlor); A2 and/or A3+B19 (anilofos)+B3 (thenylchlor); A2 and/or A3+B19 (anilofos)+B4 (pretilachlor); A2 and/or A3+B19 (anilofos)+B5 (mefenacet); A2 and/or A3+B19 (anilofos)+B6 (naproanilid); A2 and/or A3+B19 (anilofos)+B7 (propanil); A2 and/or A3+B19 (anilofos)+B8 (etobenzanid); A2 and/or A3+B19 (anilofos)+B9 (dimepiperate); A2 and/or A3+B19 (anilofos)+B10 (molinate); A2 and/or A3+B19 (anilofos)+B11 (thiobencarb); A2 and/or A3+B19 (anilofos)+B12 (pyributicarb); A2 and/or A3+B19 (anilofos)+B13 (quinclorac); A2 and/or A3+B19 (anilofos)+B14a (sulcotrione); A2 and/or A3+B19 (anilofos)+B17 (Bayer

NBA 061); A2 and/or A3+B19 (anilofos)+B18 (piperophos); A2 and/or A3+B19 (anilofos)+B20 (fenoxaprop and/or fenoxaprop-P); A2 and/or A3+B19 (anilofos)+B21 (haloxyfop); A2 and/or A3+B19 (anilofos)+B22 (DEH-112); A2 and/or A3+B19 (anilofos)+B23 (JC-940); A2 and/or A3+B19 (anilofos)+B24 (dithiopyr); A2 and/or A3+B19 (anilofos)+B25 (bromobutide); A2 and/or A3+B19 (anilofos)+B26 (cinmethylin); A2 and/or A3+B19 (anilofos)+B27 (CH-900); A2 and/or A3+B19 (anilofos)+B28 (2,4-D); A2 and/or A3+B19 (anilofos)+B29 (mecoprop and/or mecoprop-P); A2 and/or A3+B19 (anilofos)+B30 (MCPA); A2 and/or A3+B19 (anilofos)+B31 (dicamba); A2 and/or A3+B19 (anilofos)+B32 (acifluorfen); A2 and/or A3+B19 (anilofos)+B33a and/or B33b; A2 and/or A3+B19 (anilofos)+B39 (bentazon); A2 and/or A3+B19 (anilofos)+B40 (triclopyr); A2 and/or A3+B19 (anilofos)+B41 (benfuresate); A2 and/or A3+B19 (anilofos)+B42 (daimuron); A2 and/or A3+B19 (anilofos)+B43 (pendimethalin); A2 and/or A3+B19 (anilofos)+B44 (clomazon); A2 and/or A3+B19 (anilofos)+B45 (benzofenap); A2 and/or A3+B19 (anilofos)+B46 (pyrazolynate); A2 and/or A3+B19 (anilofos)+B47 (pyrazoxyfen); A2 and/or A3+B19 (anilofos)+B48 (KIH 2023); A2 and/or A3+B19 (anilofos)+B57 (metsulfuron); A2 and/or A3+B19 (anilofos)+B58 (bensulfuron); A2 and/or A3+B19 (anilofos)+B59 (pyrazosulfuron); A2 and/or A3+B19 (anilofos)+B60 (cinosulfuron); A2 and/or A3+B19 (anilofos)+B61 (imazosulfuron); A2 and/or A3+B19 (anilofos)+B62 (AC 322,140 (cyclosulfamuron)); A2 and/or A3+B19 (anilofos)+B63a (ethoxysulfuron (HOE 095404)); A2 and/or A3+B19 (anilofos)+B64 (azimsulfuron (DPX-A8947)); A2 and/or A3+B19 (anilofos)+B65 (nicosulfuron); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B1 (butachlor); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B2 (butenachlor); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B3 (thenylchlor); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B4 (pretilachlor); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B5 (mefenacet); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B6 (naproanilid); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B7 (propanil); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B8 (etobenzanid); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B9 (dimepiperate); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B10 (molinate); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B11 (thiobencarb); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B12 (pyributicarb); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B13 (quinclorac); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B14a (sulcotrione); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B17 (Bayer NBA 061); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B18 (piperophos); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B20 (fenoxaprop and/or fenoxaprop-P); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B21 (haloxyfop); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B22 (DEH-112); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B23 (JC-940); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B24 (dithiopyr); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B25 (bromobutide); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B26 (cinmethylin); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B27 (CH-900); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B28 (2,4-D); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B29 (mecoprop and/or mecoprop-P); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B30 (MCPA); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B31 (dicamba); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B32 (acifluorfen); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B33a and/or B33b; A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B39 (bentazon); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B40 (triclopyr); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B41 (benfuresate); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B42 (daimuron); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B43 (pendimethalin); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B44 (clomazon); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B45 (benzofenap); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B46 (pyrazolynate); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B47 (pyrazoxyfen); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B48 (KIH 2023); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B57 (metsulfuron); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B58 (bensulfuron); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B59 (pyrazosulfuron); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B60 (cinosulfuron); A1 and/or A1\* and/or A2 and/or A3+B63a

(ethoxysulfuron)+B61 (imazosulfuron); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B62 (AC 322,140 (cyclosulfamuron)); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B64 (azimsulfuron (DPX-A8947)); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B65 (nicosulfuron); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B1 (butachlor); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B2 (butenachlor); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B3 (thenylchlor); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B4 (pretilachlor); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B5 (mefenacet); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B6 (naproanilid); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B7 (propanil); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B8 (etobenzanid); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B9 (dimepiperate); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B10 (molinate); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B11 (thiobencarb); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B12 (pyributicarb); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B13 (quinclorac); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B14a (sulcotrione); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B17 (Bayer NBA 061); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B18 (piperophos); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B21 (haloxyfop); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B22 (DEH-112); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B23 (JC-940); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B24 (dithiopyr); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B25 (bromobutide); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B26 (cinmethylin); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B27 (CH-900); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B28 (2,4-D); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B29 (mecoprop and/or mecoprop-P); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B30 (MCPA); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B31 (dicamba); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B32 (acifluorfen); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B33a and/or B33b; A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B39 (bentazon); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B40 (triclopyr); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B41 (benfuresate); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B42 (daimuron); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B43 (pendimethalin); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B44 (clomazon); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B45 (benzofenap); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B46 (pyrazolynate); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B47 (pyrazoxyfen); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B48 (KIH 2023); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B57 (metsulfuron); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B58 (bensulfuron); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B59 (pyrazosulfuron); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B60 (cinosulfuron); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B61 (imazosulfuron); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B62 (AC 322,140 (cyclosulfamuron)); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B64 (azimsulfuron (DPX-A8947)); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B65

#### Brief Summary Text (211):

The mixtures with more than two components described above can advantageously be employed together with one or more safeners. An example of a preferred safener is 1-methylhexyl (5-chloroquinolin-8-yloxy)acetate (C2-1); this gives, for example, the following mixtures: A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B1 (butachlor)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B2 (butenachlor)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B3

(thenylchlor)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B4 (pretilachlor)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B5 (mefenacet)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B6 (naproanilid)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B7 (propanil)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B8 (etobenzanid)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B9 (dimepiperate)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B10 (molinate)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B11 (thiobencarb)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B12 (pyributicarb)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B13 (quinclorac)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B14a (sulcotrione)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B17 (Bayer NBA 061)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B18 (piperophos)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B20 (fenoxaprop and/or fenoxaprop-P)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B21 (haloxyfop)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B22 (DEH-112)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B23 (JC-940)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B24 (dithiopyr)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B25 (bromobutide)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B26 (cinmethylin)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B27 (CH-900)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B28 (2,4-D)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B29 (mecoprop and/or mecoprop-P)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B30 (MCPA)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B31 (dicamba)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B32 (acifluorfen)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B33a and/or B33b+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B39 (bentazon)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B40 (triclopyr)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B41 (benfuresate)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B42 (daimuron)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B43 (pendimethalin)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B44 (clomazon)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B45 (benzofenap)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B46 (pyrazolynate)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B47 (pyrazoxyfen)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B48 (KIH 2023)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B57 (metsulfuron)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B58 (bensulfuron)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B59 (pyrazosulfuron)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B60 (cinosulfuron)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B61 (imazosulfuron)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B62 (AC 322,140 (cyclosulfamuron))+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B63a (ethoxysulfuron (HOE 095404))+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B64 (azimsulfuron (DPX-A8947))+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B65 (nicosulfuron)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B1 (butachlor)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B2 (butenachlor)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B3 (thenylchlor)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B4 (pretilachlor)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B5 (mefenacet)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B6 (naproanilid)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B7 (propanil)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B8 (etobenzanid)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B9 (dimepiperate)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B10 (molinate)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B11 (thiobencarb)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B12 (pyributicarb)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B13 (quinclorac)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B14a (sulcotrione)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B17 (Bayer NBA 061)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B18 (piperophos)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B20 (fenoxaprop and/or fenoxaprop-P)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B21 (haloxyfop)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B22 (DEH-112)+(C2-1); A1 and/or A1\* and/or

A2 and/or A3+B63a (ethoxysulfuron)+B23 (JC-940)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B24 (dithiopyr)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B25 (bromobutide)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B26 (cinmethylin)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B27 (CH-900)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B28 (2,4-D)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B29 (mecoprop and/or mecoprop-P)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B30 (MCPA)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B31 (dicamba)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B32 (acifluorfen)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B33a and/or B33b+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B39 (bentazon)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B40 (triclopyr)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B41 (benfuresate)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B42 (daimuron)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B43 (pendimethalin)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B44 (clomazon)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B45 (benzofenap)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B46 (pyrazolynate)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B47 (pyrazoxyfen)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B48 (KIH 2023)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B57 (metsulfuron)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B58 (bensulfuron)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B59 (pyrazosulfuron)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B60 (cinzosulfuron)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B61 (imazosulfuron)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B62 (AC 322,140 (cyclosulfamuron))+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B64 (azimsulfuron (DPX-A8947))+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B65 (nicosulfuron)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B1 (butachlor)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B2 (butenachlor)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B3 (thienylchlor)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B4 (pretilachlor)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B5 (mefenacet)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B6 (naproanilid)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B7 (propanil)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B8 (etobenzanid)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B9 (dimepiperate)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B10 (molinate)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B11 (thiobencarb)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B12 (pyributicarb)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B13 (quinclorac)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B14a (sulcotrione)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B17 (Bayer NBA 061)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B18 (piperophos)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B21 (haloxyfop)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B22 (DEH-112)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B23 (JC-940)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B24 (dithiopyr)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B25 (bromobutide)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B26 (cinmethylin)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B27 (CH-900)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B28 (2,4-D)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B29 (mecoprop and/or mecoprop-P)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B30 (MCPA)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B31 (dicamba)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B32 (acifluorfen)+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B33a and/or B33b+(C2-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B39 (bentazon)+(C2-1);

Brief Summary Text (212):

Most preference is also given to mixtures of the safener (C3-1): A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B1 (butachlor)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B2 (butenachlor)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B3 (thenylchlor)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B4 (pretilachlor)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B5 (mefenacet)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B6 (naproanilid)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B7 (propanil)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B8 (etobenzanid)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B9 (dimepiperate)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B10 (molinate)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B11 (thiobencarb)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B12 (pyributicarb)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B13 (quinclorac)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B14a (sulcotrione)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B17 (Bayer NBA 061)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B18 (piperophos)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B20 (fenoxaprop and/or fenoxaprop-P)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B21 (haloxyfop)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B22 (DEH-112)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B23 (JC-940)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B24 (dithiopyr)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B25 (bromobutide)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B26 (cinnemethylin)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B27 (CH-900)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B28 (2,4-D)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B29 (mecoprop and/or mecoprop-P)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B30 (MCPA)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B31 (dicamba)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B32 (acifluorfen)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B33a and/or B33b+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B39 (bentazon)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B40 (triclopyr)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B41 (benfuresate)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B42 (daimuron)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B43 (pendimethalin)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B44 (clomazon)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B45 (benzofenap)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B46 (pyrazolynate)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B47 (pyrazoxyfen)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B48 (KIH 2023)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B57 (metsulfuron)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19 (anilofos)+B58 (bensulfuron)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19



(anilofof)+B59 (pyrazosulfuron)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19  
(anilofof)+B60 (cinosulfuron)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19  
(anilofof)+B61 (imazosulfuron)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19  
(anilofof)+B62 (AC 322,140 (cyclosulfamuron))+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19  
(anilofof)+B63a (ethoxysulfuron (HOE 095404))+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19  
(anilofof)+B64 (azimsulfuron (DPX-A8947))+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B19  
(anilofof)+B65 (Nicosulfuron)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B1 (butachlor)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B2 (butenachlor)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B3 (thienylchlor)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B4 (pretilachlor)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B5 (mefenacet)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B6 (naproanilid)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B7 (propanil)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B8 (etobenzanid)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B9 (dimepiperate)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B10 (molinate)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B11 (thiobencarb)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B12 (pyributicarb)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B13 (quinclorac)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B14a (sulcotrione)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B17 (Bayer NBA 061)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B18 (piperophos)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B20 (fenoxaprop and/or fenoxaprop-P)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B21 (haloxyfop)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B22 (DEH-112)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B23 (JC-940)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B24 (dithiopyr)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B25 (bromobutide)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B26 (cinmethylin)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B27 (CH-900)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B28 (2,4-D)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B29 (mecoprop and/or mecoprop-P)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B30 (MCPA)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B31 (dicamba)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B32 (acifluorfen)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B33a and/or B33b+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B39 (bentazon)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B40 (triclopyr)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B41 (benfuresate)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B42 (daimuron)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B43 (pendimethalin)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B44 (clomazone)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B45 (benzofenap)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B46 (pyrazolynate)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B47 (pyrazoxyfen)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B48 (KIH 2023)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B57 (metsulfuron)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B58 (bensulfuron)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B59 (pyrazosulfuron)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B60 (cinosulfuron)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B61 (imazosulfuron)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B62 (AC 322,140 (cyclosulfamuron))+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B64 (azimsulfuron (DPX-A8947))+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B63a (ethoxysulfuron)+B65 (nicosulfuron)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B1 (butachlor)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B2 (butenachlor)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B3 (thienylchlor)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B4 (pretilachlor)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B5 (mefenacet)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B6 (naproanilid)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B7 (propanil)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B8 (etobenzanid)+(C3-1); A1 and/or A1\* and/or A2



and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B9 (dimepiperate)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B10 (molinate)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B11 (thiobencarb)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B12 (pyributicarb)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B13 (quinclorac)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B14a (sulcotrione)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B17 (Bayer NBA 061)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B18 (piperophos)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B21 (haloxyfop)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B22 (DEH-112)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B23 (JC-940)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B24 (dithiopyr)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B25 (bromobutide)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B26 (cinnmethylin)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B27 (CH-900)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B28 (2,4-D)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B29 (mecoprop and/or mecoprop-P)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B30 (MCPA)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B31 (dicamba)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B32 (acifluorfen)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B33a and/or B33b+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B39 (bentazon)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B40 (triclopyr)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B41 (benfuresate)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B42 (daimuron)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B43 (pendimethalin)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B44 (clomazon)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B45 (benzofenap)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B46 (pyrazolynate)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B47 (pyrazoxyfen)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B48 (KIH 2023)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B57 (metsulfuron)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B58 (bensulfuron)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B59 (pyrazosulfuron)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B60 (cinosulfuron)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B61 (imazosulfuron)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B62 (AC 322,140 (cyclosulfamuron))+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B64 (azimsulfuron (DPX-A8947))+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B20 (fenoxaprop and/or fenoxaprop-P)+B65 (nicosulfuron)+(C3-1);

#### Brief Summary Text (216):

On the other hand, it is likewise possible to replace the sulfonylurea B63a (ethoxysulfuron) in the listed combinations by one or more of the following sulfonylureas: B57) metsulfuron; B58) bensulfuron; B59) pyrazosulfuron; B60) cinosulfuron; B61) imazosulfuron; B62) cyclosulfamuron; B64) azimsulfuron; B65) nicosulfuron.

#### Brief Summary Text (217):

Particularly preferred multicomponent combinations comprise two or more of the sulfonylureas of type B. These include, inter alia: A1 and/or A1\* and/or A2 and/or A3+B34 (chlorimuron)+B35 (triasulfuron); A1 and/or A1\* and/or A2 and/or A3+B34 (chlorimuron)+B57 (metsulfuron); A1 and/or A1\* and/or A2 and/or A3+B34 (chlorimuron)+B58 (bensulfuron); A1 and/or A1\* and/or A2 and/or A3+B34 (chlorimuron)+B59 (pyrazosulfuron); A1 and/or A1\* and/or A2 and/or A3+B34 (chlorimuron)+B60 (cinosulfuron); A1 and/or A1\* and/or A2 and/or A3+B34 (chlorimuron)+B61 (imazosulfuron); A1 and/or A1\* and/or A2 and/or A3+B34 (chlorimuron)+B62 (AC 322,140 (cyclosulfamuron)); A1 and/or A1\* and/or A2 and/or

[illegible]

A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B64 (azimsulfuron (DPX-A8947)); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B65 (nicosulfuron); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B61 (imazosulfuron)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B62 (AC 322,140 (cyclosulfamuron))+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B64 (azimsulfuron (DPX-A8947))+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B65 (nicosulfuron)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B61 (imazosulfuron)+B62 (AC 322,140 (cyclosulfamuron)); A1 and/or A1\* and/or A2 and/or A3+B61 (imazosulfuron)+B64 (azimsulfuron (DPX-A8947)); A1 and/or A1\* and/or A2 and/or A3+B61 (imazosulfuron)+B65 (nicosulfuron); A1 and/or A1\* and/or A2 and/or A3+B61 (imazosulfuron)+B62 (AC 322,140 (cyclosulfamuron))+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B61 (imazosulfuron)+B64 (azimsulfuron (DPX-A8947))+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B61 (imazosulfuron)+B65 (nicosulfuron)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B62 (cyclosulfamuron)+B64 (azimsulfuron (DPX-A8947)); A1 and/or A1\* and/or A2 and/or A3+B62 (cyclosulfamuron)+B65 (nicosulfuron); A1 and/or A1\* and/or A2 and/or A3+B62 (cyclosulfamuron)+B64 (azimsulfuron (DPX-A8947))+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B62 (cyclosulfamuron)+B65 (nicosulfuron)+(C3-1); A1 and/or A1\* and/or A2 and/or A3+B64 (azimsulfuron)+B65 (nicosulfuron); A1 and/or A1\* and/or A2 and/or A3+B64 (azimsulfuron)+B65 (nicosulfuron)+(C3-1);

#### Brief Summary Text (218):

Also of particular interest for the invention are mixtures of one or more type A compounds with at least two group B compounds, where at least one of the type B compounds is a sulfonylurea compound and at least one of the type B compounds is a grass herbicide. These mixtures include, for example, inter alia: A1 and/or A1\* and/or A2 and/or A3+B57 (metsulfuron)+B1 (butachlor); A1 and/or A1\* and/or A2 and/or A3+B57 (metsulfuron)+B2 (butenachlor); A1 and/or A1\* and/or A2 and/or A3+B57 (metsulfuron)+B3 (thiophenylchlor); A1 and/or A1\* and/or A2 and/or A3+B57 (metsulfuron)+B4 (pretilachlor); A1 and/or A1\* and/or A2 and/or A3+B57 (metsulfuron)+B5 (mefenacet); A1 and/or A1\* and/or A2 and/or A3+B57 (metsulfuron)+B6 (naproanilid); A1 and/or A1\* and/or A2 and/or A3+B57 (metsulfuron)+B7 (propanil); A1 and/or A1\* and/or A2 and/or A3+B57 (metsulfuron)+B8 (etobenzanid); A1 and/or A1\* and/or A2 and/or A3+B57 (metsulfuron)+B9 (dimepiperate); A1 and/or A1\* and/or A2 and/or A3+B57 (metsulfuron)+B10 (molinat); A1 and/or A1\* and/or A2 and/or A3+B57 (metsulfuron)+B11 (thiobencarb); A1 and/or A1\* and/or A2 and/or A3+B57 (metsulfuron)+B12 (pyributicarb); A1 and/or A1\* and/or A2 and/or A3+B57 (metsulfuron)+B13 (quinclorac); A1 and/or A1\* and/or A2 and/or A3+B57 (metsulfuron)+B14a (sulcotrione); A1 and/or A1\* and/or A2 and/or A3+B57 (metsulfuron)+B15 (cycloxydim); A1 and/or A1\* and/or A2 and/or A3+B57 (metsulfuron)+B16 (sethoxydim); A1 and/or A1\* and/or A2 and/or A3+B57 (metsulfuron)+B17 (NBA 061); A1 and/or A1\* and/or A2 and/or A3+B57 (metsulfuron)+B18 (piperophos); A1 and/or A1\* and/or A2 and/or A3+B57 (metsulfuron)+B19 (anilofos); A1 and/or A1\* and/or A2 and/or A3+B57 (metsulfuron)+B20 (fenoxaprop and/or fenoxaprop-P); A1 and/or A1\* and/or A2 and/or A3+B57 (metsulfuron)+B21 (haloxyfop); A1 and/or A1\* and/or A2 and/or A3+B57 (metsulfuron)+B22 (DEH-112); A1 and/or A1\* and/or A2 and/or A3+B57 (metsulfuron)+B23 (JC-940); A1 and/or A1\* and/or A2 and/or A3+B57 (metsulfuron)+B24 (dithiopyr); A1 and/or A1\* and/or A2 and/or A3+B57 (metsulfuron)+B25 (bromobutide); A1 and/or A1\* and/or A2 and/or A3+B57 (metsulfuron)+B26 (cinmethylin); A1 and/or A1\* and/or A2 and/or A3+B57 (metsulfuron)+B27 (CH-900); A1 and/or A1\* and/or A2 and/or A3+B58 (bensulfuron)+B1 (butachlor); A1 and/or A1\* and/or A2 and/or A3+B58 (bensulfuron)+B2 (Butenachlor); A1 and/or A1\* and/or A2 and/or A3+B58 (bensulfuron)+B3 (thiophenylchlor); A1 and/or A1\* and/or A2 and/or A3+B58 (bensulfuron)+B4 (pretilachlor); A1 and/or A1\* and/or A2 and/or A3+B58 (bensulfuron)+B5 (mefenacet); A1 and/or A1\* and/or A2 and/or A3+B58 (bensulfuron)+B6 (naproanilid); A1 and/or A1\* and/or A2 and/or A3+B58 (bensulfuron)+B7 (propanil); A1 and/or A1\* and/or A2 and/or A3+B58 (bensulfuron)+B8 (etobenzanid); A1 and/or A1\* and/or A2 and/or A3+B58 (bensulfuron)+B9 (dimepiperate); A1 and/or A1\* and/or A2 and/or A3+B58 (bensulfuron)+B10 (molinat); A1 and/or A1\* and/or A2 and/or A3+B58 (bensulfuron)+B11 (thiobencarb); A1 and/or A1\* and/or A2 and/or A3+B58 (bensulfuron)+B12 (pyributicarb); A1 and/or A1\* and/or A2 and/or A3+B58 (bensulfuron)+B13 (quinclorac); A1 and/or A1\* and/or A2 and/or A3+B58 (bensulfuron)+B14a (sulcotrione); A1 and/or A1\* and/or A2 and/or A3+B58 (bensulfuron)+B15 (cycloxydim); A1 and/or A1\* and/or A2 and/or A3+B58 (bensulfuron)+B16 (sethoxydim); A1 and/or A1\* and/or A2 and/or A3+B58 (bensulfuron)+B17 (NBA 061); A1 and/or A1\* and/or A2 and/or A3+B58 (bensulfuron)+B18

(piperophos); A1 and/or A1\* and/or A2 and/or A3+B58 (bensulfuron)+B19 (anilofos); A1 and/or A1\* and/or A2 and/or A3+B58 (bensulfuron)+B20 (fenoxaprop and/or fenoxaprop-P); A1 and/or A1\* and/or A2 and/or A3+B58 (bensulfuron)+B21 (haloxyfop); A1 and/or A1\* and/or A2 and/or A3+B58 (bensulfuron)+B22 (DEH-112); A1 and/or A1\* and/or A2 and/or A3+B58 (bensulfuron)+B23 (JC-940); A1 and/or A1\* and/or A2 and/or A3+B58 (bensulfuron)+B24 (dithiopyr); A1 and/or A1\* and/or A2 and/or A3+B58 (bensulfuron)+B25 (bromobutide); A1 and/or A1\* and/or A2 and/or A3+B58 (bensulfuron)+B26 (cinmethylin); A1 and/or A1\* and/or A2 and/or A3+B58 (bensulfuron)+B27 (CH-900); A1 and/or A1\* and/or A2 and/or A3+B59 (pyrazosulfuron)+B1 (butachlor); A1 and/or A1\* and/or A2 and/or A3+B59 (pyrazosulfuron)+B2 (butenachlor); A1 and/or A1\* and/or A2 and/or A3+B59 (pyrazosulfuron)+B3 (thenylchlor); A1 and/or A1\* and/or A2 and/or A3+B59 (pyrazosulfuron)+B4 (pretilachlor); A1 and/or A1\* and/or A2 and/or A3+B59 (pyrazosulfuron)+B5 (mefenacet); A1 and/or A1\* and/or A2 and/or A3+B59 (pyrazosulfuron)+B6 (naproanilid); A1 and/or A1\* and/or A2 and/or A3+B59 (pyrazosulfuron)+B7 (propanil); A1 and/or A1\* and/or A2 and/or A3+B59 (pyrazosulfuron)+B8 (etobenzanid); A1 and/or A1\* and/or A2 and/or A3+B59 (pyrazosulfuron)+B9 (dimepiperate); A1 and/or A1\* and/or A2 and/or A3+B59 (pyrazosulfuron)+B10 (molinate); A1 and/or A1\* and/or A2 and/or A3+B59 (pyrazosulfuron)+B11 (thiobencarb); A1 and/or A1\* and/or A2 and/or A3+B59 (pyrazosulfuron)+B12 (pyributicarb); A1 and/or A1\* and/or A2 and/or A3+B59 (pyrazosulfuron)+B13 (quinclorac); A1 and/or A1\* and/or A2 and/or A3+B59 (pyrazosulfuron)+B14a (sulcotrione); A1 and/or A1\* and/or A2 and/or A3+B59 (pyrazosulfuron)+B15 (cycloxydim); A1 and/or A1\* and/or A2 and/or A3+B59 (pyrazosulfuron)+B16 (sethoxydim); A1 and/or A1\* and/or A2 and/or A3+B59 (pyrazosulfuron)+B17 (NBA 061); A1 and/or A1\* and/or A2 and/or A3+B59 (pyrazosulfuron)+B18 (piperophos); A1 and/or A1\* and/or A2 and/or A3+B59 (pyrazosulfuron)+B19 (anilofos); A1 and/or A1\* and/or A2 and/or A3+B59 (pyrazosulfuron)+B20 (fenoxaprop and/or fenoxaprop-P); A1 and/or A1\* and/or A2 and/or A3+B59 (pyrazosulfuron)+B21 (haloxyfop); A1 and/or A1\* and/or A2 and/or A3+B59 (pyrazosulfuron)+B22 (DEH-112); A1 and/or A1\* and/or A2 and/or A3+B59 (pyrazosulfuron)+B23 (JC-940); A1 and/or A1\* and/or A2 and/or A3+B59 (pyrazosulfuron)+B24 (dithiopyr); A1 and/or A1\* and/or A2 and/or A3+B59 (pyrazosulfuron)+B25 (bromobutide); A1 and/or A1\* and/or A2 and/or A3+B59 (pyrazosulfuron)+B26 (cinmethylin); A1 and/or A1\* and/or A2 and/or A3+B59 (pyrazosulfuron)+B27 (CH-900); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B1 (butachlor); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B2 (butenachlor); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B3 (thenylchlor); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B4 (pretilachlor); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B5 (mefenacet); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B6 (naproanilid); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B7 (propanil); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B8 (etobenzanid); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B9 (dimepiperate); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B10 (molinate); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B11 (thiobencarb); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B12 (pyributicarb); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B13 (quinclorac); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B14a (sulcotrione); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B15 (cycloxydim); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B16 (sethoxydim); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B17 (NBA 061); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B18 (piperophos); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B19 (anilofos); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B20 (fenoxaprop and/or fenoxaprop-P); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B21 (haloxyfop); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B22 (DEH-112); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B23 (JC-940); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B24 (dithiopyr); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B25 (bromobutide); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B26 (cinmethylin); A1 and/or A1\* and/or A2 and/or A3+B60 (cinosulfuron)+B27 (CH-900); A1 and/or A1\* and/or A2 and/or A3+B61 (imazosulfuron)+B1 (butachlor); A1 and/or A1\* and/or A2 and/or A3+B61 (imazosulfuron)+B2 (butenachlor); A1 and/or A1\* and/or A2 and/or A3+B61

(imazosulfuron)+B3 (thienylchlor); A1 and/or A1\* and/or A2 and/or A3+B61  
(imazosulfuron)+B4 (pretilachlor); A1 and/or A1\* and/or A2 and/or A3+B61  
(imazosulfuron)+B5 (mefenacet); A1 and/or A1\* and/or A2 and/or A3+B61  
(imazosulfuron)+B6 (naproanilid); A1 and/or A1\* and/or A2 and/or A3+B61  
(imazosulfuron)+B7 (propanil); A1 and/or A1\* and/or A2 and/or A3+B61  
(imazosulfuron)+B8 (etobenzanid); A1 and/or A1\* and/or A2 and/or A3+B61  
(imazosulfuron)+B9 (dimepiperate); A1 and/or A1\* and/or A2 and/or A3+B61  
(imazosulfuron)+B10 (molinate); A1 and/or A1\* and/or A2 and/or A3+B61  
(imazosulfuron)+B11 (thiobencarb); A1 and/or A1\* and/or A2 and/or A3+B61  
(imazosulfuron)+B12 (pyributicarb); A1 and/or A1\* and/or A2 and/or A3+B61  
(imazosulfuron)+B13 (quinclorac); A1 and/or A1\* and/or A2 and/or A3+B61  
(imazosulfuron)+B14a (sulcotrione); A1 and/or A1\* and/or A2 and/or A3+B61  
(imazosulfuron)+B15 (cycloxydim); A1 and/or A1\* and/or A2 and/or A3+B61  
(imazosulfuron)+B16 (sethoxydim); A1 and/or A1\* and/or A2 and/or A3+B61  
(imazosulfuron)+B17 (NBA 061); A1 and/or A1\* and/or A2 and/or A3+B61  
(imazosulfuron)+B18 (piperophos); A1 and/or A1\* and/or A2 and/or A3+B61  
(imazosulfuron)+B19 (anilofos); A1 and/or A1\* and/or A2 and/or A3+B61  
(imazosulfuron)+B20 (fenoxaprop and/or fenoxaprop-P); A1 and/or A1\* and/or A2 and/or A3+B61  
(imazosulfuron)+B21 (haloxyfop); A1 and/or A1\* and/or A2 and/or A3+B61  
(imazosulfuron)+B22 (DEH-112); A1 and/or A1\* and/or A2 and/or A3+B61  
(imazosulfuron)+B23 (JC-940); A1 and/or A1\* and/or A2 and/or A3+B61  
(imazosulfuron)+B24 (dithiopyr); A1 and/or A1\* and/or A2 and/or A3+B61  
(imazosulfuron)+B25 (bromobutide); A1 and/or A1\* and/or A2 and/or A3+B61  
(imazosulfuron)+B26 (cinmethylin); A1 and/or A1\* and/or A2 and/or A3+B61  
(imazosulfuron)+B27 (CH-900); A1 and/or A1\* and/or A2 and/or A3+B62  
(cyclosulfamuron)+B1 (butachlor); A1 and/or A1\* and/or A2 and/or A3+B62  
(cyclosulfamuron)+B2 (butenachlor); A1 and/or A1\* and/or A2 and/or A3+B62  
(cyclosulfamuron)+B3 (thienylchlor); A1 and/or A1\* and/or A2 and/or A3+B62  
(cyclosulfamuron)+B4 (pretilachlor); A1 and/or A1\* and/or A2 and/or A3+B62  
(cyclosulfamuron)+B5 (mefenacet); A1 and/or A1\* and/or A2 and/or A3+B62  
(cyclosulfamuron)+B6 (naproanilid); A1 and/or A1\* and/or A2 and/or A3+B62  
(cyclosulfamuron)+B7 (propanil); A1 and/or A1\* and/or A2 and/or A3+B62  
(cyclosulfamuron)+B8 (etobenzanid); A1 and/or A1\* and/or A2 and/or A3+B62  
(cyclosulfamuron)+B9 (dimepiperate); A1 and/or A1\* and/or A2 and/or A3+B62  
(cyclosulfamuron)+B10 (molinate); A1 and/or A1\* and/or A2 and/or A3+B62  
(cyclosulfamuron)+B11 (thiobencarb); A1 and/or A1\* and/or A2 and/or A3+B62  
(cyclosulfamuron)+B12 (pyributicarb); A1 and/or A1\* and/or A2 and/or A3+B62  
(cyclosulfamuron)+B13 (quinclorac); A1 and/or A1\* and/or A2 and/or A3+B62  
(cyclosulfamuron)+B14a (sulcotrione); A1 and/or A1\* and/or A2 and/or A3+B62  
(cyclosulfamuron)+B15 (cycloxydim); A1 and/or A1\* and/or A2 and/or A3+B62  
(cyclosulfamuron)+B16 (sethoxydim); A1 and/or A1\* and/or A2 and/or A3+B62  
(cyclosulfamuron)+B17 (NBA 061); A1 and/or A1\* and/or A2 and/or A3+B62  
(cyclosulfamuron)+B18 (piperophos); A1 and/or A1\* and/or A2 and/or A3+B62  
(cyclosulfamuron)+B19 (anilofos); A1 and/or A1\* and/or A2 and/or A3+B62  
(cyclosulfamuron)+B20 (fenoxaprop and/or fenoxaprop-P); A1 and/or A1\* and/or A2 and/or A3+B62  
(cyclosulfamuron)+B21 (haloxyfop); A1 and/or A1\* and/or A2 and/or A3+B62  
(cyclosulfamuron)+B22 (DEH-112); A1 and/or A1\* and/or A2 and/or A3+B62  
(cyclosulfamuron)+B23 (JC-940); A1 and/or A1\* and/or A2 and/or A3+B62  
(cyclosulfamuron)+B24 (dithiopyr); A1 and/or A1\* and/or A2 and/or A3+B62  
(cyclosulfamuron)+B25 (bromobutide); A1 and/or A1\* and/or A2 and/or A3+B62  
(cyclosulfamuron)+B26 (cinmethylin); A1 and/or A1\* and/or A2 and/or A3+B62  
(cyclosulfamuron)+B27 (CH-900); A1 and/or A1\* and/or A2 and/or A3+B64  
(azimsulfuron)+B1 (butachlor); A1 and/or A1\* and/or A2 and/or A3+B64  
(azimsulfuron)+B2 (butenachlor); A1 and/or A1\* and/or A2 and/or A3+B64  
(azimsulfuron)+B3 (thienylchlor); A1 and/or A1\* and/or A2 and/or A3+B64  
(azimsulfuron)+B4 (pretilachlor); A1 and/or A1\* and/or A2 and/or A3+B64  
(azimsulfuron)+B5 (mefenacet); A1 and/or A1\* and/or A2 and/or A3+B64  
(azimsulfuron)+B6 (naproanilid); A1 and/or A1\* and/or A2 and/or A3+B64  
(azimsulfuron)+B7 (propanil); A1 and/or A1\* and/or A2 and/or A3+B64  
(azimsulfuron)+B8 (etobenzanid); A1 and/or A1\* and/or A2 and/or A3+B64  
(azimsulfuron)+B9 (dimepiperate); A1 and/or A1\* and/or A2 and/or A3+B64  
(azimsulfuron)+B10 (molinate); A1 and/or A1\* and/or A2 and/or A3+B64  
(azimsulfuron)+B11 (thiobencarb); A1 and/or A1\* and/or A2 and/or A3+B64  
(azimsulfuron)+B12 (pyributicarb); A1 and/or A1\* and/or A2 and/or A3+B64  
(azimsulfuron)+B13 (quinclorac); A1 and/or A1\* and/or A2 and/or A3+B64

(azimsulfuron)+B14a (sulcotrione); A1 and/or A1\* and/or A2 and/or A3+B64  
(azimsulfuron)+B15 (cycloxydim); A1 and/or A1\* and/or A2 and/or A3+B64  
(azimsulfuron)+B16 (sethoxydim); A1 and/or A1\* and/or A2 and/or A3+B64  
(azimsulfuron)+B17 (NBA 061); A1 and/or A1\* and/or A2 and/or A3+B64  
(azimsulfuron)+B18 (piperophos); A1 and/or A1\* and/or A2 and/or A3+B64  
(azimsulfuron)+B19 (anilofos); A1 and/or A1\* and/or A2 and/or A3+B64  
(azimsulfuron)+B20 (fenoxaprop and/or fenoxaprop-P); A1 and/or A1\* and/or A2 and/or A3+B64  
(azimsulfuron)+B21 (haloxyfop); A1 and/or A1\* and/or A2 and/or A3+B64  
(azimsulfuron)+B22 (DEH-112); A1 and/or A1\* and/or A2 and/or A3+B64  
(azimsulfuron)+B23 (JC-940); A1 and/or A1\* and/or A2 and/or A3+B64  
(azimsulfuron)+B24 (dithiopyr); A1 and/or A1\* and/or A2 and/or A3+B64  
(azimsulfuron)+B25 (bromobutide); A1 and/or A1\* and/or A2 and/or A3+B64  
(azimsulfuron)+B26 (cinmethylin); A1 and/or A1\* and/or A2 and/or A3+B64  
(azimsulfuron)+B27 (CH-900);

Brief Summary Text (224):

abamectin, AC94377, AC263222, AC3-103630, acephate, aclonifen, acrinathrin, acypectas, AKH-7088, alachlor, alanycarb, aldicarb, aldoxycarb, allethrin, alloxydim, alpha-cypermethrin, ametryn, amidosulfuron, amitraz, amitrole, ammonium sulfamate, ancymidol, anilazine, anthraquinone, asulam, atrazine, azaconazole, azadirachtin, azamethiphos, azinphos-ethyl, azinphosmethyl, azocyclotin, BAS480F, BAS490F, benalaxyl, benazolin, bendiocarb, benfluralin, benfuracarb, benomyl, benoxacor, bensulide, bensultap, benzoximate, betacyfluthrin, beta-cypermethrin, bifenox, bifenthrin, bilanafos, bioallethrin, bioallethrin (S-cyclopentenyl isomer), bioresmethrin, biphenyl, bitertanol, blasticidinS, borax, Bordeaux mixture, brodifacoum, bromacil, bromadiolone, bromethalin, bromfenoxim, bromopropylate, bromoxynil, bromuconazole, bronopol, bupirimate, buprofezin, butamifos, butocarboxim, butoxycarboxim, butralin, butylamine, butylate, cadusafos, calcium polysulfide, captafol, captan, carbaryl, carbendazim, carbetamide, carbofuran, carbosulfan, carboxin, cartap, CGA50439, CGA183893, CGA219417, chinomethionat, chlomethoxyfen, chloralose, chloramben, chlorbromuron, chlorbufam, chlordane, chlorethoxyfos, chlorfenvinphos, chlorfluazuron, chlorflurenol, chloridazon, chlormephos, chlormequat, chlornitrofen, chloracetic acid, chlorobenzilate, chloroneb, chlorophacinone, chloropicrin, chlorothalonil, chlorotoluron, chlorophonium, chlorpropham, chlorpyrifos, chlorpyrifos-methyl, chlorsulfuron, chlorthal, chlorthiamid, chlozolate, CL26691, CL304415, clethodim, clodinafop, cloethocarb, clofentezine, clomeprop, cloprop, clopyralid, cloquintocet, cloxyfonac, copper hydroxide, copper oxychloride, copper sulfate, coumaphos, coumatetralyl, 4-CPA, cuprous oxide, cyanamide, cyanazine, cyanophos, cycloate, cycloprothrin, cyfluthrin, beta-cyfluthrin, cyhalothrin, lambda-cyhalothrin, cyhexatin, cymoxanil, cypermethrin, alpha-cypermethrin, beta-cypermethrin, zeta-cypermethrin, cyphenotrin, cyproconazole, cyromazine, daminozide, dazomet, 2,4-DB, DCIP, debacarb, decan-1-ol, deltamethrin, demeton-S-methyl, desmedipham, desmetryn, diafenthiuron, diazinon, dichlobenil, dichlofluanid, dichlone, dichlormid, dichlorophen, 1,3-dichloropropene, dichlorprop, dichlorprop-P, dichlorvos, diclofop, diclomezine, dicloran, diclofol, dicrotophos, dienochlor, diethofencarb, diethyltoluamide, difenacoum, diefenconazole, difenzoquat, difethialone, diflubenzuron, diflufenican, dikegulac, dimefuron, dimethachlor, dimethametryn, dimethenamid, dimethipin, dimethirimol, dimethoate, dimethomorph, dimethyl phthalate, dimethylvinphos, diniconazole, dinitramine, dinocap, dinoterb, diofenolan, dioxabenzofos, diphacinone, diphenamid, diphenylamine, dipropyl pyridine-2,5-dicarboxylate, diquat, disulfuton, dithianon, diuron, DKA-24, DNOC, dodemorph, dodine, edifenphos, empenthrin, endosulfan, endothal, ENT8184, EPN, EPTC, ergocalciferol, esfenvalerate, esprocarb, ET751, ethalfluralin, ethametsulfuron-methyl, ethephon, ethiofencarb, ethion, ethirimol, ethofumesate, ethoprophos, ethoxyquin, ethychlozate, ethylene dibromide, ethylene dichloride, etofenprox, etridiazole, F8426, famphur, fenamiphos, fenarimol, fenazaquin, fenbuconazole, fenbutatin oxide, fenchlorazole, fenclorim, fenfuram, fenitrothion, fenobucarb, fenothiocarb, fenoxycarb, fencpiclonil, fenpropathrin, fenpropidin, fenpropimorph, fenpyroximate, fenthion, fentin, fenuron, fenvalerate, ferbam, ferbam, ferimzone, fipronil, flampop, flampop-M, flazasulfuron, floccoumafen, fluazifop, fluazifop-P, fluazinam, fluazuron, fluchloralin, flucycloxuron, flucythrinate, fludioxonil, flufenoxuron, flumetralin, flumetsulam, flumiclorac, flumioxazin, fluometuron, fluoroacetamide, fluoroglycofen, fluoromide, flupoxam, flupropanate, fluquinconazole, flurazole, flurenol, fluridone, flurochloridone, fluroxypyr, flurprimidol, flurtamone, flusilazole, flusulfamide,

flutolanil, flutriafol, tau-fluvalinate, fluxofenim, folpet, fomesafen, fonofos, forchlorfenuron, formetanate, formothion, fosamine, fosetyl, fosthiazate, fuberidazole, furalaxyl, furathiocarb, furilazole, gibberellic acid, gibberellin A.sub.4 gibberellin A.sub.7, guazatine, GY-81, halfenprox, halosulfuron, HC-252, gamma-HCH, heptachlor, heptenophos, hexachlorobenzene, hexaconazole, hexaflumuron, hexazinone, hexythiazox, hydramethylnon, 2-hydrazinoethanol, hydroprene, 8-hydroxyquinoline sulfate, hymexazol, ICIA0858, ICIA5504, imazalil, imazamethabenz, imazapyr, imazaquin, imazethapyr, imibenconazole, imidacloprid, iminoctadien, inabenfide, indol-3-ylacetic acid, 4-indol-3-ylbutyric acid, ipconazole, iprobenfos, iprodione, isazofos, isofenphos, isopamphos, isoprocab, isoprothiolane, isoproturon, isouron, isoxaben, isoxapyrifop, isoxathion, kasugamycin, KIH9201, lactofen, lambda-cyhalothrin, lenacil, linuron, lufenuron, malathion, maleic hydrazide, mancozeb, mancozeb, maneb, MCPA-thioethyl, MCPB, mecarbam, mefluidide, mepanipyrim, mephosfolan, mepiquat, mepronil, metalaxyl, metaldehyde, metam, metamidon, metazachlor, metconazole, methabenzthiazuron, methacrifos, methamidophos, methasulfocarb, methidathion, methiocarb, methomyl, methoprene, methoxychlor, methylarsonic acid, methyl bromide, methylidymron, methyl isothiocyanate, metiram, metobenzuron, metobromuron, metolcarb, metoxuron, metribuzin, mevinphos, milbemectin, MK-243, monocrotophos, monolinuron, muscalure, myclobutanil, nabam, naled, naphthenic acid, 2-(1-naphthyl)acetamide, (1-naphthyl)acetic acid, (2-naphthoxyloxy)acetic acid, napropamide, naptalam, natamycin, NC-330, neburon, NI-25, nickel bis(dimethylthiocarbamate), niclosamide, nicotine, nitenpyram, nithiazine, nitrapyrin, nitrothal-isopropyl, norflurazon, nuarimol, octhilinone, 2-(octylthio)ethanol, ofurace, omethoate, orbencarb, oryzalin, oxabetrinil, oxadixyl, oxamyl, oxine-copper, oxolinic acid, oxycarboxin, oxydemeton-methyl, paclobutrazol, paraquat, parathion, parathion-methyl, pebulate, pefurazate, penconazole, pencycuron, pentachlorophenol, pentanochlor, permethrin, phenmedipham, phenothrin, phenthoate, 2-phenylphenol, N-phenylphthalamic acid, phorate, phosalone, phosdiphen, phosmet, phosphamidon, phoxim, phthalide, pindone, piperalin, piperonyl butoxide, pirimicarb, pirimiphos-ethyl, pirimiphos-methyl, polyoxins, prallethrin, pretilachlor, primisulfuron, probenazole, prochloraz, procymidone, prodiamine, profenofos, prohexadione, prometron, propachlor, propamocarb, propaphos, propaquizafop, propargite, propazine, propetamphos, propham, propiconazole, propineb, propisochlor, propoxur, propyzamide, prosulfocarb, prosulfuron, prothiofos, pymetrozine, pyraclofos, pyrethrins, pyridaben, pyridaphenthion, pyridate, pyrifenox, pyrimethanil, pyrimidifen, pyriproxyfen, pyriothiobac-sodium, pyroquilon, quinalophos, quinmerac, quinoctamine, quintozone, quizalofop, quizalofop-P, resmethrin, rimsulfuron, rotenone, RU15525, S421, siduron, silafluofen, smazine, sodium fluoroacetate, SSF-109, SSI-121, streptomycin, strychnine, sulcofuron, sulfentrazone, sulfluramid, sulfometuron, sulfotep, sulfur, sulprofos, tar oils, 2,3,6-TBA, TCA-sodium, tebuconazole, tebufenozide, tebufenpyrad, tebutam, tebuthiuron, tecloftalam, tecnazene, teflubenzuron, tefluthrin, temephos, terbacil, terbufos, terbumeton, terbuthylazine, terbutryn, tetrachlorvinphos, tetraconazole, tetradifon, tetramethrin, tetramethrin[(1R)-isomers], thiabendazole, thidiazuron, thifensulfuron, thifluzamide, thiocyclam, thiodicarb, thiofanox, thiometon, thiophanate-methyl, thiram, tiocarbazil, tolclufos-methyl, tolylfluanid, tralkoxydim, tralomethrin, transfluthrin, triadimefon, triadimenol, tri-allate, triazamate, triazophos, triazoxide, tribenuron, S, S, S-tributyl phosphotriethioate, trichlorfen, tricyclazole, tridemorph, trietazine, triflumizole, triflumuron, trifluralin, trifluthrin, triforine, trimethacarb, trinexapac, triticonazole, uniconazole, validamycin, vamidothion, vernolate, vinclozolin, warfarin, XDE537, XMC, xylylcarb, zineb, ziram.

#### Detailed Description Text (1):

1. FORMULATION EXAMPLES a) A dust is obtained by mixing 10 parts by weight of an active compound combination according to the invention and 90 parts by weight of talc as inert substance and comminuting the mixture in a hammer mill. b) A wettable powder which is readily dispersible in water is obtained by mixing 25 parts by weight of active compounds A+B, 64 parts by weight of kaolin-containing quartz as inert substance, 10 parts by weight of potassium ligninsulfonate and 1 part by weight of sodium oleoylmethyltaurate as wetting agent and dispersant, and grinding the mixture in a pinned-disk mill. c) A dispersion concentrate which is readily dispersible in water is obtained by mixing 20 parts by weight of active compounds A+B with 6 parts by weight of alkylphenol polyglycol ether (.RTM.Triton X 207), 3



parts by weight of isotridecanol polyglycol ether (8 EO) and 71 parts by weight of paraffinic mineral oil (boiling range for example approximately 255 to 277.degree. C.), and grinding the mixture in a ball mill to a fineness of below 5 microns. d) An emulsifiable concentrate is obtained from 15 parts by weight of cyclohexanone as solvent and 10 parts by weight of ethoxylated nonylphenol as emulsifier. e) Water-dispersible granules are obtained by mixing 75 parts by weight of active compounds A+B, 10 parts by weight of calcium lignosulfonate, 5 parts by weight of sodium lauryl sulfate, 3 parts by weight of polyvinyl alcohol and 7 parts by weight of kaolin, grinding the mixture in a pinned-disk mill and granulating the powder in a fluidized bed by spraying on water as granulation liquid. f) Water-dispersible granules are also obtained by homogenizing, in a colloid mill, 25 parts by weight of active compounds A+B, 5 parts by weight of sodium 2,2'-dinaphthylmethane-6,6'-disulfonate, 2 parts by weight of sodium oleoylmethyltaurate, 1 part by weight of polyvinyl alcohol, 17 parts by weight of calcium carbonate and 50 parts by weight of water, precommuniting the mixture, subsequently grinding it in a bead mill and atomizing and drying the resulting suspension in a spray tower by means of a single-substance nozzle. g) Extruder granules are obtained by mixing and grinding 20 parts by weight of active compounds A+B, 3 parts by weight of sodium lignosulfonate, 1 part by weight of carboxymethylcellulose and 76 parts by weight of kaolin and moistening the mixture with water. This mixture is extruded and subsequently dried in a stream of air.

Current US Original Classification (1):

504/128

Current US Cross Reference Classification (2):

504/133

#### CLAIMS:

21. A herbicidal composition, comprising a synergistic amount of B) at least one herbicidally active compound from the group of the substituted phenylsulfonylureas of the formula I and their agriculturally accepted, i.e. acceptable and compatible, salts ##STR135## in which R.sup.1 is (C.sub.1 -C.sub.8)-alkyl, (C.sub.3 -C.sub.4)-alkenyl, (C.sub.3 -C.sub.4)-alkynyl or (C.sub.1 -C.sub.4)-alkyl, which is mono- to tetrasubstituted by radicals from the group consisting of halogen and (C.sub.1 -C.sub.2)-alkoxy; R.sup.2 is I R.sup.3 is methyl or methoxy; and Z is N in combination with at least one herbicidally active compound from the group of the compounds B' consisting of B1) butachlor, B2) butenachlor, B3) thenylchlor, B4) pretilachlor, B5) mefenacet, B5a) Bay FOE 5043, B6) naproanilid, B7) propanil, B8) etobenzanid, B9) dimepiperate, B10) molinate, B11) thiobencarb, B12) pyributicarb, B13) quinclorac, B14a) sulcotrione, B15) cycloxydim B16) sethoxydim B17) NBA 061, B18) piperophos, B19) anilofos, B21) haloxyfop, B22) cyhalofop, B23) JC-940, B24) dithiopyr, B25) bromobutide, B26) cinmethylin, B27) CH-900, B32) acifluorfen, B34) chlorimuron, B37) picloram, B38) carfentrazone B40) triclopyr, B41) benfuresate, B42) daimuron, B44) clomazon, B45) benzofenap, B46) pyrazolynate, B47) pyrazoxyfen, B49) KIH 6127, B50) oxadiazon, B51) oxadiargyl, B56) dalapon, B58) bensulfuron, B59) pyrazosulfuron, B60) cinosulfuron, B61) imazosulfuron, B62) AC 322,140 (Cyclosulfamuron), B63a) ethoxysulfuron (HOE 095404), B64) azimsulfuron (DPX-A8947), B66) prometryn, B67) simetryn, B68) thiazopyr, B69) pyrazophos, B70) pentoxazone, B71) indanofan, B72) LGC 40863 and B73) MY 100 or in combination with two or more herbicidally active compounds from the group of the compounds B'' consisting of B1) butachlor, B2) butenachlor, B3) thenylchlor, B4) pretilachlor, B5) mefenacet, B5a) Bay FOE 5043, B6) naproanilid, B7) propanil, B8) etobenzanid, B9) dimepiperate, B10) molinate, B11) thiobencarb, B12) pyributicarb, B13) quinclorac, B14a) sulcotrione, B15) cycloxydim B16) sethoxydim B17) NBA 061, B18) piperophos, B19) anilofos, B20) fenbaxaprop, fenoxaprop-P, B21) haloxyfop, B22) cyhalofop, B23) JC-940, B24) dithiopyr, B25) bromobutide, B26) cinmethylin, B27) CH-900, B28) 2,4-D, B29) mecoprop, mecoprop-P, B30) MCPA, B31) dicamba, B32) acifluorfen, ##STR136## B34) chlorimuron, B35) triasulfuron, B36) ioxynil, B37) picloram, B38) carfentrazone, B39) bentazon, B40) triclopyr, B41) benfuresate, B42) daimuron, B43) pendimethalin, B44) clomazon, B45) benzofenap, B46) pyrazolynate, B47) pyrazoxyfen, B48) KIH 2023, B49) KIH 6127, B50) oxadiazon, B51) oxadiargyl, B52) acetochlor, B53) metolachlor, B54) metosulam, B55) oxyfluorfen B56) dalapon, B57) metsulfuron, B58) bensulfuron, B59) pyrazosulfuron, B60) cinosulfuron, B61) imazosulfuron, B62) AC 322,140



(cyclosulfamuron), B63a)ethoxysulfuron (HOE 095404), B64)azimsulfuron (DPX-A8947), B65)nicosulfuron, B66)prometryn, B67)simetryn, B68)thiazopyr, B69)pyrazophos, B70)pentoxazone, B71)indanofan, B72)LGC 40863 and B73)MY 100 where in the case B" at least one of the compounds from the group B" also has to belong to group B'.

22. A process for rip-roaring a composition as claimed in claim 1, which comprises, formulating the compounds of the formula I or their salts (type A compounds) with one or more compounds of type B analogously to a customary crop protection formulation from the group consisting of wettable powders, emulsifiable concentrates, aqueous solutions, emulsions, sprayable solutions (tank mix), oil- or water-based dispersions, suspoemulsions, dusting agents, seed dressings, granules for soil application or application by broadcasting, water-dispersible granules, ULV formulations, microcapsules and waxes.

30. A method for controlling undesirable harmful plants in rice crops which comprises applying to said harmful plants or to an area where they reside an effective amount of a herbicidal composition comprising A) at least one herbicidally active compound from the group of the substituted phenylsulfonyleureas of the formula I and their agriculturally accepted, salts ##STR137## in which R<sup>sup.1</sup> is (C.sub.1 -C.sub.8)-alkyl, (C.sub.3 -C.sub.4)-alkenyl, (C.sub.3 -C.sub.4)-alkynyl or (C.sub.1 -C.sub.4)-alkyl, which is mono- to tetrasubstituted by radicals selected from the group consisting of halogen and/or (C.sub.1 -C.sub.2)-alkoxy; R<sup>sup.2</sup> is I R<sup>sup.3</sup> is methyl or methoxy; and Z is N and B) at least one herbicidally active compound from the group of the compounds consisting of Ba) herbicides which are selective in rice against grasses selected from the group consisting of B1) butachlor, B2) butenachlor, B3) thenylchlor, B4) pretilachlor, B5) mefenacet, B5a) Bay FOE 5043, B6) naproanilid, B7) propanil, B8) etobenzanid, B9) dimepiperate, B10) molinate, B11) thiobencarb, B12) pyributicarb, B13) quinclorac, B14) cyclohexandiones of the formula II ##STR138## in which R<sup>sup.1</sup> is halogen, (C.sub.1 -C.sub.4)-alkoxy, (C.sub.1 -C.sub.4)-alkyl, (C.sub.1 -C.sub.4)-haloalkyl, --NO.sub.2, --CN or S(O).sub.n R<sup>sup.10</sup>; R<sup>sup.2</sup> and R<sup>sup.3</sup> independently of one another are hydrogen, halogen, (C.sub.1 -C.sub.4)-alkyl, (C.sub.1 -C.sub.4)-alkoxy, (C.sub.1 -C.sub.4)-haloalkoxy, (C.sub.1 -C.sub.4)-haloalkyl, --NO.sub.2, --CN or S(O).sub.m R<sup>sup.11</sup>, --NR<sup>sup.12</sup> R<sup>sup.13</sup> --NR<sup>sup.14</sup> --CO--R<sup>sup.15</sup>; R<sup>sup.4</sup> is hydrogen, (C.sub.1 -C.sub.4)-alkyl or --CO--O--(C.sub.1 -C.sub.4)-alkyl; R<sup>sup.5</sup>, R<sup>sup.6</sup>, R<sup>sup.7</sup>, R<sup>sup.8</sup>, R<sup>sup.9</sup> independently of one another are hydrogen or (C.sub.1 -C.sub.4)-alkyl or --CO--R<sup>sup.16</sup>; R<sup>sup.10</sup> is (C.sub.1 -C.sub.4)-alkyl, (C.sub.1 -C.sub.4)-haloalkyl or (C.sub.1 -C.sub.4)-alkoxy; R<sup>sup.11</sup> is (C.sub.1 -C.sub.4)-alkyl, (C.sub.1 -C.sub.4)-haloalkyl, phenyl, benzyl or --NR<sup>sup.17</sup> R<sup>sup.18</sup>; R<sup>sup.12</sup> and R<sup>sup.13</sup> independently of one another are hydrogen or (C.sub.1 -C.sub.4)-alkyl; R<sup>sup.14</sup> is hydrogen or (C.sub.1 -C.sub.4)-alkyl; R<sup>sup.15</sup> is (C.sub.1 -C.sub.4)-alkyl; R<sup>sup.16</sup> is hydrogen, (C.sub.1 -C.sub.4)-alkyl, (C.sub.1 -C.sub.4)-haloalkyl or (C.sub.1 -C.sub.4)-alkoxy; R<sup>sup.17</sup> and R<sup>sup.18</sup> independently of one another are hydrogen or (C.sub.1 -C.sub.4)-alkyl; and n and m independently of one another are 0, 1 or 2, B15) sethoxydim B16) NBA 061, B17) piperophos, B18) anilofos, B19) fenoxaprop, fenoxaprop-P, B20) haloxyfop, B21) cyhalofop, B22) JC-940, B23) dithiopyr, B24) bromobutide, B25) cinmethylin and B26) CH-900, Bb) herbicides which are selective in rice against dicotyledonous harmful plants and cyperaceae selected from the group consisting of B27) 2,4-D B28) mecoprop, mecoprop-P, B29) MCPA, B30) dicamba, B31) acifluorfen, B33a) ##STR139## B34) chlorimuron, B35) triasulfuron, B36) ioxynil, B37) picloram and B38) carfentrazone, Bc) herbicides which are selective in rice against cyperaceae selected from the group consisting of B39) bentazon, B40) triclopyr, B41) benfuresate and B42) daimuron, Bd) herbicides which are selective in rice against grasses and dicotyledonous harmful plants and harmful cyperaceae plants selected from the group consisting of B43) pendimethalin, B44) clomazon, B45) benzofenap, B46) pyrazolynate, B47) pyrazoxyfen, B48) KIH 2023, B49) KIH 6127, B50) oxadiazon, B51) oxadiargyl, B52) acetochlor, B53) metolachlor, B54) metosulam, B55) oxyfluorfen, B56) dalapon, B57) metsulfuron, B58) bensulfuron, B59) pyrazosulfuron, B60) cinosulfuron, B61) imazosulfuron, B62) AC 322,140 (Cyclosulfamuron), B63a) ethoxysulfuron (HOE 095404), B64) azimsulfuron (DPX-A8947), B65) nicosulfuron, B66) prometryn, B67) simetryn, B68) thiazopyr, B69) pyrazophos, B70) pentoxazone, B71) indanofan, B72) LGC 40863 and B73) MY 100, in a weight ratio A:B in the range from 1:20,000 to 200:1.

**WEST**

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File: USPT

Nov 26, 2002

DOCUMENT-IDENTIFIER: US 6486096 B1

TITLE: Herbicidal compositions with acylated aminophenylsulfonylureas

Brief Summary Text (18):

Said herbicides of the formula (I) and their salts inhibit the enzyme acetolactate synthase (ALS) and thus protein synthesis in plants. The application rate of the herbicides of the formula (I) can vary within a wide range, for example between 0.001 and 0.5 kg of a.s./ha (a.s./ha means here and in the following "active substance per hectare"-based on 100% active compound). In the case of applications at application rates of 0.01 to 0.1 kg of a.s./ha of the herbicides of the formula (I), preferably of the formulae (A1), (A2) or (A3), in particular (A1), pre- and postemergence a relatively broad spectrum of annual and perennial weeds, weed grasses and Cyperaceae is controlled. The application rates in the case of the combinations according to the invention are, as a rule, lower, e.g. in the range from 0.5 to 120 g of a.s./ha, preferably 2 to 80 g of a.s./ha. As a rule, the active compounds can be formulated as water-soluble powders (WP), water-dispersible granules (WDG), water-emulsifiable granules (WEG), suspoemulsions (SE) or oil suspension concentrate (SC).

Brief Summary Text (64):

Compounds (A) and (B) or their combinations can be formulated in different ways, depending on the biological and/or chemico-physical parameters which prevail. The following are examples of general possibilities for formulations: wettable powders (WP), emulsifiable concentrates (EC), aqueous solutions (SL), emulsions (EW) such as oil-in-water and water-in-oil emulsions, sprayable solutions or emulsions, oil- or water-based dispersions, suspoemulsions, dusts (DP), seed-dressing materials, granules for soil application or for broadcasting, or water dispersible granules (WG), ULV formulations, microcapsules or waxes.

Brief Summary Text (68):

Wettable powders (sprayable powders) are products which are uniformly dispersible in water and which, besides the active substance, also comprise ionic or nonionic surfactants (wetters, dispersants), for example polyoxethylated alkylphenols, polyethoxylated fatty alcohols or fatty amines, alkanesulfonates or alkylbenzenesulfonates, sodium lignosulfonate, sodium 2,2'-dinaphthylmethane-6,6'-disulfonate, sodium dibutyl-naphthalenesulfonate or else sodium oleoylmethyltauride, in addition to a diluent or inert material.

Brief Summary Text (72):

Suitable active substances may also be granulated in the manner conventionally used for the production of fertilizer granules, if desired in a mixture with fertilizers. As a rule, water-dispersible granules are prepared by processes such as spray drying, fluidized-bed granulation, disk granulation, mixing with high-speed mixers and extrusion without solid inert material.

Brief Summary Text (75):

In the case of granules such as dispersible granules, the active substance content depends partly on whether the active compound is present in liquid or solid form and on which granulation auxiliaries and fillers are being used. As a rule, the content amounts to between 10 and 90% by weight in the case of the water-dispersible granules.

For use, the formulations, which are present in commercially available form, are optionally diluted in the customary manner, for example using water in the case of wettable powders, emulsifiable concentrates, dispersions and water-dispersible granules. Preparations in the form of dusts, soil granules, granules for broadcasting and sprayable solutions are usually not diluted further prior to use with other inert substances.

(B2.5.1) 2,4-D (PM, pp. 323-327), (2,4-dichlorophenoxy)acetic acid, frequently employed forms: 2,4-D-butotyl, 2,4-D-butyl, 2,4-D- dimethylammonium, 2,4-D-diolamine, 2,4-D-isooctyl, 2,4-D- isopropyl, 2,4-D-trolamine (B2.5.2) MCPA (PM, pp. 770-771), (4-chloro-2-methylphenoxy)acetic acid, predominantly employed forms are, inter alia, MCPA- butotyl, MCPA-dimethylammonium, MCPA-isooctyl, MCPA-potassium, MCPA-sodium (B2.5.3) bensulfuron and its esters, preferably the methyl ester and its salts, (PM, pp. 104-105), methyl .alpha.-(4,6-dimethoxypyrimidin-2-ylcarbamoysulfamoyl)-O-toluate (B2.5.4) methsulfuron and its esters, preferably the methyl ester, and their salts (PM, pp. 842-844), methyl 2-[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)amino]carbonyl]amino]sulfonyl]benzoate (B2.5.6) acifluorfen (PM, pp. 12-14), 5-(2-chloro-.alpha.,.alpha.,.alpha.,-trifluoro-p-tolyloxy)-2-nitrobenzoic acid also used as acifluorfen-sodium (B2.5.7) bispyribac (KIH 2023), the form as a sodium salt is preferred (PM, pp. 129-131), sodium 2,6-bis[(4,6-dimethoxypyrimidin-2-yl)oxy]benzoate (B2.5.8) ethoxysulfuron and its esters and salts (PM, pp. 488-490), 1-(4,6-dimethoxypyrimidin-2-yl)-3-(2-ethoxyphenoxy)sulfonyl)urea (B2.5.9) cinosulfuron and its esters and salts (PM, pp. 248-250), 1-(4,6-dimethoxy-1,3,5-triazin-2-yl)-3-[2-(2-methoxyethoxy)phenylsulfonyl]urea (B2.5.10) pyrazosulfuron and its esters, preferably the ethyl ester, and their salts (PM, pp. 1052-1054), methyl 5-(4,6-dimethoxypyrimidin-2-ylcarbamoysulfamoyl)-1-methylpyrazole-4-carboxylate (B2.5.11) imazosulfuron and its esters and salts (PM, pp. 703-704), 1-(2-chloroimidazo[1,2-a]pyridin-3-ylsulfonyl)-3-(4,6-dimethoxypyrimidin-2-yl)urea (B2.5.12) cyclosulfamuron and its esters and salts (PM, pp. 288-289), N-[[[2-(cyclopropylcarbonyl)phenyl]amino]sulfonyl]-N1-(4,6-dimethoxypyrimidin-2-yl)urea (B2.5.13) chlorsulfuron and its esters and salts (PM, pp. 239-240), 1-(2-chlorophenylsulfonyl)-3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)urea (B2.5.14) bromobutide (PM, pp. 144-145), 2-bromo-3,3-dimethyl-N-(1-methyl-1-phenylethyl)butyramide (B2.5.15) bentazone (PM, pp. 109-111), 3-isopropyl-1H-2,1,3-benzothiadiazin-4(3H)-one-2,2-dioxide (B2.5.16) benfuresate (PM, pp. 98-99), 2,3-dihydro-3,3-dimethylbenzofuran-5-ylethanesulfonate (B2.5.17) chlorimuron and its esters, preferably the ethyl ester, and their salts (PM, pp. 217-218), ethyl 2-(4-chloro-6-methoxypyrimidin-2-ylcarbonylsulfamoyl)benzoate c) herbicides which are selective in wheat, rye, oats or barley, for example (B2.6) from the group having different structural types, such as

A. GENERAL FORMULATION EXAMPLES a) A dust is obtained by mixing 10 parts by weight of an active substance/active substance mixture and 90 parts by weight of talc as inert material and comminuting the mixture in a hammer mill. b) A wettable powder which is readily dispersible in water is obtained by mixing 25 parts by weight of an active substance/active substance mixture, 64 parts by weight of kaolin-containing quartz as inert material, 10 parts by weight of potassium lignosulfonate and 1 part by weight of sodium oleoylmethyltaurinate as wetter and dispersant, and grinding the mixture in a pinned-disk mill. c) A dispersion concentrate which is readily dispersible in water is obtained by mixing 20 parts by weight of an active substance/active substance mixture with 6 parts by weight of alkylphenol polyglycol ether (.RTM.Triton X 207), 3 parts by weight of isotridecanol polyglycol ether (8 EO) and 71 parts by weight of paraffinic mineral oil (boiling range for example approx. 255 to 277.degree. C.), and grinding the mixture in a ball mill to a fineness of below 5 microns. d) An emulsifiable concentrate is obtained from 15 parts by weight of an active substance/active substance mixture, 75 parts by weight of cyclohexanone as solvent and 10 parts by weight of oxethylated nonylphenol as emulsifier. e) Water-dispersible granules are obtained by mixing 75 parts by weight of an active substance/active substance mixture, 10 parts by weight of calcium lignosulfonate, 5 parts by weight of sodium lauryl sulfate, 3 parts by weight of

polyvinyl alcohol and 7 parts by weight of kaolin, grinding the mixture on a pinned-disk mill and granulating the powder in a fluidized bed by spraying on water as granulation liquid. f) Water-dispersible granules are also obtained by homogenizing and precomminuting, in a colloid mill, 25 parts by weight of an active substance/active substance mixture, 5 parts by weight of sodium 2,2'-dinaphthylmethane-6,6'-disulfonate, 2 parts by weight of sodium oleoylmethyltaurate, 1 part by weight of polyvinyl alcohol, 17 parts by weight of calcium carbonate and 50 parts by weight of water, subsequently grinding the mixture in a bead mill and atomizing and drying the resulting suspension in a spray tower by means of a single-substance model.

Current US Original Classification (1):

504/133

Current US Cross Reference Classification (1):

504/128

Current US Cross Reference Classification (3):

504/136

#### CLAIMS:

1. A synergistic herbicide combination having a synergistic effective amount of components (A) and (B), where (A) is one or more herbicides selected from the group consisting of the formula (I) and their salts. ##STR6## in which R<sup>sup.1</sup> is hydrogen or (C.sub.1 -C.sub.4)alkyl, R<sup>sup.2</sup> is hydrogen or (C.sub.1 -C.sub.4)alkyl, R<sup>sup.3</sup> is H, (C.sub.1 -C.sub.4)alkyl, (C.sub.1 -C.sub.4)alkoxy, (C.sub.2 -C.sub.4)alkenoxy, (C.sub.2 -C.sub.4)alkynoxy, (C.sub.3 -C.sub.6)cycloalkyl, each of the 5 last-mentioned radicals being unsubstituted or substituted by one or more radicals from the group consisting of halogen, cyano, (C.sub.1 -C.sub.4)alkoxy and (C.sub.1 -C.sub.4)alkylsulfonyl, one of the radicals X and Y is halogen, (C.sub.1 -C.sub.4)alkyl, (C.sub.1 -C.sub.4)alkoxy, (C.sub.1 -C.sub.4)alkylthio, where each of the three last-mentioned radicals is unsubstituted or substituted by one or more radicals from the group consisting of halogen, (C.sub.1 -C.sub.4)alkyl, (C.sub.1 -C.sub.4)alkoxy, (C.sub.1 -C.sub.4)alkylthio, and the other of the radicals X and Y is (C.sub.1 -C.sub.4)alkyl, (C.sub.1 -C.sub.4)alkoxy or (C.sub.1 -C.sub.4)alkylthio, where each of the three last-mentioned radicals is unsubstituted or substituted by one or more radicals from the group consisting of halogen, (C.sub.1 -C.sub.4)alkoxy and (C.sub.1 -C.sub.4)alkylthio, Z is CH, and (B) one or more herbicides from the group consisting of alachlor, metolachlor, acetochlor, dimethenamid, pethoxamid, atrazine, simazine, cyanazine, terbutylazine, metribuzin, isoxaflutole, fluthiamide, terbutryn, nicosulfuron, rimsulfuron, primisulfuron, pendimethalin, sulcotrione, dicamba, mesotrione, linuron, isoxachlortole, benoxacor, metosulam, flumetsulam, cloransulam, florasulam, molinate, thiobencarb, quinchlorac, propanil, pyribenzoxim, butachlor, pretilachlor, clomazone, oxadiargyl, oxaziclomefone, anilofos, cafenstrole, mefenacet, fentrazamid, thiazopyr, triclopyr, oxadiazone, esprocarb, pyributicarb, azimsulfuron, thenylchlor, pentoxazone, pyriminobac, quizalofop/quizalofop-P, fenoxacrop/fenoxaprop-P, fluazifop/fluazifop-P, haloxyfop/haloxyfop-P, propaquizafop, clodinafop, cyhalofop, sethoxydim, cycloxydim, clethodim, clefoxidim, isoproturon, chlortuloron, prosulfocarb, isopropyl 5-(4-bromo-1-methyl-5-(trifluoromethyl)-1H-pyrazol-3-yl)-2-chloro-4-fluoro benzoate, diclofop/diclofop-P, imazamethabenz, triasulfuron, flupyrsulfuron, a compound of the formula (III) or its salts, ##STR7## in which R<sup>sup.1</sup> is CO--Q--R<sup>sup.8</sup>, R<sup>sup.2</sup> and R<sup>sup.3</sup> independently of one another are H or (C.sub.1 -C.sub.4)alkyl, R<sup>sup.4</sup> is H, (C.sub.1 -C.sub.8)alkyl which is unsubstituted or is substituted by one or more radicals from the group consisting of halogen, (C.sub.1 -C.sub.4)alkoxy, (C.sub.1 -C.sub.4)alkylthio, (C.sub.1 -C.sub.4)alkylsulfinyl, (C.sub.1 -C.sub.4)alkylsulfonyl, ((C.sub.1 -C.sub.4)alkoxy)carbonyl and CN, or is (C.sub.3 -C.sub.6)alkenyl which is unsubstituted or is substituted by one or more halogen atoms, or is hydroxyl, (C.sub.1 -C.sub.4)alkoxy, ((C.sub.1 -C.sub.4)alkyl)carbonyl or (C.sub.1 -C.sub.4)alkylsulfonyl, each of the three latter radicals being unsubstituted or unsubstituted in the alkyl moiety by one or more halogen atoms or by (C.sub.1 -C.sub.4)alkoxy or (C.sub.1 -C.sub.4)alkylthio, or is phenylsulfonyl in which the phenyl radical is unsubstituted or substituted, and R<sup>sup.5</sup> is (C.sub.1 -C.sub.4)alkylsulfonyl or (C.sub.3 -C.sub.6)alkenylsulfonyl, each of the two

latter radical being unsubstituted or substituted by one or more halogen atoms or by (C.sub.1 -C.sub.4)alkoxy or (C.sub.1 -C.sub.4)alkylthio, or is phenylsulfonyl or phenylcarbonyl, the phenyl radical in each of the two latter radicals being unsubstituted or substituted, or is mono- or di-((C.sub.1 -C.sub.4)alkyl)aminosulfonyl or ((C.sub.1 -C.sub.6)alkyl)carbonyl, each of the three latter radicals being unsubstituted or substituted by one or more radicals from the group consisting of halogen, (C.sub.1 -C.sub.4)alkoxy, (C.sub.1 -C.sub.4)alkoxy, (C.sub.1 -C.sub.4)alkylthio, (C.sub.1 -C.sub.4)alkylsulfinyl, (C.sub.1 -C.sub.4)alkylsulfonyl, ((C.sub.1 -C.sub.4)alkyl)carbonyl, ((C.sub.1 -C.sub.4)alkoxy)carbonyl and CN, or is formyl, a group of the formula --CO--CO--R' in which R'=H, OH, (C.sub.1 -C.sub.4)alkoxy or (C.sub.1 -C.sub.4) alkyl, or is ((C.sub.3 -C.sub.6) Cycloalkyl)carbonyl, ((C.sub.2 -C.sub.6)alkenyl)carbonyl or ((C.sub.2 -C.sub.6) alkynyl)carbonyl, each of the three latter radicals being unsubstituted or substituted by one or more halogen atoms, or is a group of the formula ##STR8## or R.sup.4 and R.sup.5 together are a chain of the formula (--CH.sub.2).sub.m B-- or --B.sub.1 --(CH.sub.2).sub.m1 --B--, the chain being unsubstituted or substituted by one or more (C.sub.1 -C.sub.3) alkyl radicals and m being 3 or 4 or m.sup.1 being 2 or 3, and W is an oxygen or sulfur atom (i.e. O or S); B and B.sub.1 independently of one another are SO.sub.2 or CO; Q is O, S or --NR.sup.13 --, T is O or S, R.sup.6 is H, (C.sub.1 -C.sub.4)alkyl, (C.sub.1 -C.sub.4)alkoxy, ((C.sub.1 -C.sub.4)alkyl)carbonyl or ((C.sub.1 -C.sub.4) alkoxy)carbonyl, each of the 4 latter radicals being unsubstituted or substituted in the alkyl moiety by one or more halogen atoms, or is halogen, NO.sub.2 or CN, R.sup.7 is H or CH.sub.3, R.sup.8 is H, (C.sub.1 -C.sub.4) alkyl, (C.sub.3 -C.sub.4)alkenyl or (C.sub.3 -C.sub.4) alkynyl, each of the three latter radicals being unsubstituted or substituted by one or more radicals from the group consisting of halogen, (C.sub.1 -C.sub.4) alkoxy, (C.sub.1 -C.sub.4)alkylthio, ((C.sub.1 -C.sub.4)alkyl)carbonyl and ((C.sub.1 -C.sub.4)alkoxy) carbonyl, R.sup.9 is (C.sub.1 -C.sub.4) alkyl, (C.sub.3 -C.sub.4)alkenyl, (C.sub.3 -C.sub.4) alkynyl, each of the three latter radicals being unsubstituted or substituted by one or more radicals from the group consisting of halogen, (C.sub.1 -C.sub.4)alkoxy, (C.sub.1 -C.sub.4) alkylthio, ((C.sub.1 -C.sub.4)alkyl)carbonyl and ((C.sub.1 -C.sub.4)alkoxy)carbonyl, R.sup.10 and R.sup.11 independently of one another are H, (C.sub.1 -C.sub.4)alkyl, (C.sub.3 -C.sub.4) alkenyl or (C.sub.3 -C.sub.4)alkynyl, each of the three latter radicals being unsubstituted or substituted by one or more radicals from the group consisting of halogen, (C.sub.1 -C.sub.4)alkoxy, (C.sub.1 -C.sub.4)alkylthio, ((C.sub.1 -C.sub.4) alkoxy)carbonyl, the radicals R.sup.12 together with the nitrogen atom are a heterocyclic ring having 5 or 6 ring members, which may contain further heteroatoms from the group consisting of N, O and S in the possible oxidation states and is unsubstituted or is substituted by (C.sub.1 -C.sub.4)alkyl or the oxo group, or is benzo-fused, R.sup.13 is H, (C.sub.1 -C.sub.4) alkyl, (C.sub.3 -C.sub.4) alkenyl or (C.sub.3 -C.sub.4) alkynyl, each of the three latter radicals being unsubstituted or substituted by one or more radicals from the group consisting of halogen, (C.sub.1 -C.sub.4)alkoxy and (C.sub.1 -C.sub.4)alkylthio, A is a radical of the formula ##STR9## one of the radicals X and Y is hydrogen, halogen, (C.sub.1 -C.sub.3)alkyl or (C.sub.1 -C.sub.3)alkoxy, the two latter radicals being unsubstituted or being mono- or polysubstituted by halogen or monosubstituted by (C.sub.1 -C.sub.3)alkoxy, and the other of the radicals X and Y is hydrogen, (C.sub.1 -C.sub.3)alkyl, (C.sub.1 -C.sub.3)alkoxy or (C.sub.1 -C.sub.3)alkylthio, the three latter alkyl-containing radicals being unsubstituted or mono- or polysubstituted by halogen or mono- or disubstituted by (C.sub.1 -C.sub.3) alkoxy or (C.sub.1 -C.sub.3)alkylthio, or is a radical of the formula NR.sup.14 R.sup.15, (C.sub.3 -C.sub.6) cycloalkyl, (C.sub.2 -C.sub.4)alkenyl, (C.sub.2 -C.sub.4)alkynyl, (C.sub.3 -C.sub.4)alkenyloxy or (C.sub.3 -C.sub.4)alkynyloxy, Z is CH or N, R.sup.14 and R.sup.15 independently of one another are H, (C.sub.1 -C.sub.3)alkyl or (C.sub.3 -C.sub.4)alkenyl, X.sup.1 is CH.sub.3, OCH.sub.3, OC.sub.2 H.sub.5 or OCHF.sub.2, Y.sup.1 is --O-- or --CH.sub.2, X.sup.2 is CH.sub.3, C.sub.2 H.sub.5 or CH.sub.2 CF.sub.3, Y.sup.2 is OCH.sub.3, OC.sub.2 H.sub.5, SCH.sub.3, SCH.sub.2 CH.sub.3, CH.sub.3 or C.sub.2 H.sub.5, X.sup.3 is CH.sub.3 or OCH.sub.3, Y.sup.3 is H or CH.sub.3, X.sup.4 is CH.sub.3, OCH.sub.3, OC.sub.2 H.sub.5, CH.sub.2 OCH.sub.3 or Cl, Y.sup.4 is CH.sub.3, OCH.sub.3, OC.sub.2 H.sub.5 or Cl, and Y.sup.5 is CH.sub.3, C.sub.2 H.sub.5, OCH.sub.3 or Cl, MCPA, 2,4-D, bromoxynil, bentazone, fluthiacet, pyridate, diflufenzopyr, carfentrazone, clopyralid, halosulfuron, thifensulfuron, prosulfuron, iodosulfuron, tritosulfuron, sulfosulfuron, 2,4-D, MCPA, bensulfuron, methsulfuron, acifluorfen, bispyribac, ethoxysulfuron, cinosulfuron, pyrazosulfuron

imazosulfuron, cyclosulfamuron, chlorsulfuron, bromobutide, bentazone, benfuresate, chlorimuron, diflufenican, flurtamone, tribenuron, amidosulfuron, mecoprop/mecoprop-p, dichlorprop/dichlorprop-P, fluroxypyr, picloram, loxynil, bifenox, pyraflufen-ethyl, fluoroglyphofen-ethyl, cinidon-ethyl, picolinofen, glufosinate, glyphosate, imazapyr, imazethapyr, imazamethabenz, imazamethabenz-methyl, imazamox, imazaquin and imazapic.

**WEST**

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L17: Entry 9 of 33

File: USPT

Sep 24, 2002

DOCUMENT-IDENTIFIER: US 6455470 B1

TITLE: Herbicidal compositions

Brief Summary Text (46):

Suitable surfactants include alkyl benzene sulfonates and alkyl naphthalene sulfonates, sulfated fatty alcohols, amines or acid amides, long chain acid esters of sodium isothionate, esters of sodium sulfosuccinate, sulfated or sulfonated fatty acid esters, petroleum sulfonates, sulfonated vegetable oils, ditertiary acetylenic glycols, polyoxyethylene derivatives of alkyl ary ethers, polyoxyethylene derivatives of alkylphenols (particularly isooctylphenol and nonylphenol) and polyoxyethylene derivatives of the mono-higher fatty acid esters of hexitol anhydrides (e.g., sorbitan), polyoxyethylene allyl phenyl ether formaldehyde condensates, polyoxyethylene phenyl phenol ether sulfates, polyoxyethylene aryl ethers, alkoxyated amines, inorganic ammonium salts, such as ammonium sulphate, ammonium nitrate and ammonium phosphates, ammonium salts derived from organic amines such as primary, secondary and tertiary amines, diamines such as ethylene diamine and piperazine, morpholine, polyamines, alkoxyated amines and amine surfactants. Preferred dispersants are methylcellulose, polyvinyl alcohol, sodium lignin sulfonates, polymeric alkyl naphthalene sulfonates, sodium naphthalene sulfonate, and polymethylene bisnaphthalene sulfonate.

Brief Summary Text (47):

Wettable powders are water-dispersible compositions containing the active ingredients mixture, an inert solid extender and one or more wetting and dispersing agents. The inert solid extenders are usually of mineral origin such as the natural clays, diatomaceous earth and synthetic minerals derived from silica and the like. Examples of such extenders include kaolinites, attapulgitic clay and synthetic magnesium silicate. The wettable powders compositions of this invention usually contain from above 0.5 to 60 parts (preferably 5 to 20 parts) of active ingredients mixture, from about 0.25 to 25 parts (preferably 1 to 15 parts) of wetting agent, from about 0.25 to about 25 parts (preferably 1 to 15 parts) of dispersant and from 5 to about 95 parts (preferably 5 to 50 parts) of inert solid extender, all parts being by weight of the total composition. Where required, from about 0.1 to 2.0 parts of the solid inert extender can be replaced by a corrosion inhibitor or anti-foaming agent or both.

Brief Summary Text (48):

The compositions of the invention may be in the form of water dispersible granules (WG) comprising the herbicidally-active constituents together with surfactants, dispersing agents, disintegrating agents, fillers, diluents and the like.

Current US Cross Reference Classification (1):

504/129

Current US Cross Reference Classification (4):

504/133

Current US Cross Reference Classification (7):

504/136

Reference Publication (21):use of metsulfuron-methyl alone and in mixture with chlorsulfuron for week

control in cereals in the United Kingdom," A. P. Selley et al., British Crop Protection Conference--Weeds, No. 3, 1985, pp. 931-938.



**WEST**

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L17: Entry 10 of 33

File: USPT

Apr 24, 2001

DOCUMENT-IDENTIFIER: US 6221809 B1

TITLE: Herbicidal compositions comprising

N-[(4,6-dimethoxypyridin-2-yl)aminocarbonyl]-5-methylsulphonamidomethyl-2-alkoxycarbonylbenzene sulphonamides

Brief Summary Text (7):

Furthermore, general mention is made of the possibility that the compounds of the formula 1 can be applied together with other herbicides. This mention is followed by an exemplary list of more than about 250 different standard active compounds of which, inter alia, amidosulfurone, bentazone, bifenox, bromoxynil, cafentrazon (ICI-A0051), chlortoluron, chlorsulfuron, clodinafop and its ester derivatives (for example clodinafop-propargyl), dicamba, dichlorprop, diclofop and its esters such as diclofop-methyl, difenzoquat, diflufenican, fenoxaprop and fenoxaprop-P and esters thereof such as, for example, fenoxaprop-P-ethyl and fenoxaprop-ethyl, flamprop-methyl, fluoroglycofen-ethyl, fluroxypyr, flurtamone, fomesafen, glufosinate, glyphosate, imazamethabenz-methyl, ioxynil, isoproturon, lactofen, MCPA, mecoprop, methabenzthiazuron, metribuzin, metsulfuron-methyl, pendimethalin, prosulfocarb, thifensulfuron-methyl, tralkoxydim, triasulfuron and tribenuron-methyl are explicitly mentioned. Other than just mentioning the substances, WO 95/10507 does not provide additional information with regard to the particular essence and purpose of a joint application, nor does it provide a reason for the intended selection and combination of particular active compounds.

Brief Summary Text (236):

The active compounds of types A and B can be formulated in various ways, depending on the prevailing biological and/or chemico-physical parameters. The following are examples of suitable formulations: wettable powders (WP), emulsifiable concentrates (EC), water-soluble powders (SP), water-soluble concentrates (SL), concentrated emulsions (BW), such as oil-in-water and water-in-oil emulsions, sprayable solutions or emulsions, capsule suspensions (CS), oil- or water-based dispersions (SC), suspoemulsions, suspension concentrates, dusts (DP), oil-miscible solutions (OL), seed-dressing products, granules (GR) in the form of microgranules, spray granules, coated granules and adsorption granules, granules for broadcasting or soil application, water-soluble granules (SG), water-dispersible granules (WG), ULV formulations, microcapsules and waxes.

Brief Summary Text (237):

Among these, water-soluble wettable powders (WP), water-dispersible granules (WG), water-emulsifiable granules (EC), suspoemulsions (SE) and oil-suspension concentrates (SC) are preferred.

Brief Summary Text (241):

The herbicide combinations of the invention are prepared particularly advantageously by formulating the compounds of the formula I or salts thereof (type A compounds) with one or more compounds of type B similar to a conventional crop protection formulation from the group consisting of water-soluble wettable powders (WP), water-dispersible granules (WDG), water-emulsifiable granules (WEG), suspoemulsions (SE) and oil suspension concentrates (SC).

Brief Summary Text (242):

Wettable powders are preparations which are uniformly dispersible in water and which, besides the active compounds, also comprise ionic and/or nonionic surfactants

(wetting agents, dispersants), for example polyethoxylated alkylphenols, polyethoxylated fatty alcohols, polyethoxylated fatty amines, fatty alcohol polyglycol ether sulfates, alkanesulfonates or alkylarylsulfonates, sodium lignosulfonate, sodium 2,2'-dinaphthylmethane-6,6'-disulfonate, sodium dibutylnaphthalene-sulfonate or else sodium oleoylmethyltaurinate, in addition to a diluent or inert substance.

Brief Summary Text (246):

Water-dispersible granules are generally prepared by the customary processes such as spray drying, fluidized-bed granulation, disk granulation, mixing with high-speed mixers and extrusion without solid inert material. It is also possible to granulate suitable active compounds in the manner customarily used for preparing fertilizer granules--if appropriate in a mixture with fertilizers.

Brief Summary Text (248):

The concentrations of the active compounds A+B in the formulations may vary. In wettable powders, the active compound concentration is, for example, approximately 10 to 95% by weight, the remainder to 100% by weight being composed of customary formulation components. In the case of emulsifiable concentrates, the active compound concentration may amount to approximately 1 to 85% by weight, preferably 5 to 80% by weight. Formulations in the form of dusts comprise approximately 1 to 25% by weight, in most cases 5 to 20% by weight, of active compounds, and sprayable solutions comprise approximately 0.2 to 25% by weight, preferably 2 to 20% by weight, of active compounds. The active compound content of granules such as dispersible granules depends partly on whether the active compound is in liquid or solid form and on which granulation auxiliaries and fillers are being used. In general, the content of the water-dispersible granules amounts to between 10 and 90% by weight.

Brief Summary Text (330):

For use, the formulations, which are in commercially available form, are, if appropriate, diluted in the customary manner, for example using water in the case of wettable powders, emulsifiable concentrates, dispersions and water-dispersible granules. Preparations in the form of dusts, granules for soil application or for broadcasting and sprayable solutions are usually not diluted further with additional inert substances prior to use.

Detailed Description Text (7):

e) Water-dispersible granules are obtained by mixing 75 parts by weight of active compounds A+B, 10 parts by weight of calcium lignosulfonate, 5 parts by weight of sodium lauryl sulfate, 3 parts by weight of polyvinyl alcohol and 7 parts by weight of kaolin, grinding the mixture in a pinned-disk mill and granulating the powder in a fluidized bed by spraying on water as granulation liquid.

Current US Original Classification (1):

504/136

CLAIMS:

25. A process for preparing a composition which comprises

~~mixing the compounds of the formula I or salts thereof (group A compounds) with one or more compounds of group B and, if appropriate, with one or more compounds of group C using a customary crop protection formulation selected from the group consisting of wettable powders, emulsifiable concentrates, aqueous solutions, emulsions, sprayable solutions (tank-mix), oil- or water-based dispersions, suspoemulsions, dusts, seed dressings, granules for soil application or application by broadcasting, water-dispersible granules, ULV formulations, microcapsules and waxes.~~

**WEST**

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L17: Entry 11 of 33

File: USPT

Dec 26, 2000

DOCUMENT-IDENTIFIER: US 6165939 A

TITLE: Concentrate herbicidal composition

Brief Summary Text (12):

European Patent Application No. 0 268 574 ('574) discloses herbicidal compositions comprising an aqueous medium having dissolved therein a water-soluble salt of glyphosate and having dispersed therein two substantially water-insoluble active ingredients, namely simazine and diuron, each in solid particulate form. Also present in the disclosed compositions are a first surfactant which is a phosphate ester of an ethoxylated aralkylated phenol and a second surfactant which is an ethoxylated C.sub.8-18 alkanoyl ester of sorbitan and/or an ethoxylated C.sub.14-20 alcohol, together with a thickener.

Brief Summary Text (14):

U.S. Pat. No. 5,152,823 to Albrecht et al. discloses aqueous herbicidal compositions comprising at least one water-soluble herbicide such as a salt of glyphosate or glufosinate and at least two herbicides present in disperse form, for example a triazine herbicide (e.g., atrazine, cyanazine, simazine) and a urea herbicide (e.g., diuron, chlortoluron, isoproturon, monolinuron, linuron). Surfactants present in the disclosed compositions include alkyl ether sulfates combined with ethoxylated fatty alcohols and sulfosuccinic monoesters.

Brief Summary Text (15):

U.S. Pat. No. 4,936,901 to Surgant et al. discloses solid water-dispersible granular herbicidal compositions comprising an encapsulated herbicide and at least one non-encapsulated herbicide. The encapsulated herbicide is exemplified by the chloroacetamide herbicide alachlor, and the non-encapsulated herbicide by the triazine herbicide atrazine or by a salt of glyphosate.

Brief Summary Text (20):

U.S. Pat. No. 4,931,086 to Moucharafieh discloses a herbicidal composition prepared by mixing an oil phase that comprises a liquid thiolcarbamate herbicide and an aqueous phase wherein is suspended a solid particulate triazine herbicide. Also present are an anionic emulsifier that is a calcium alkylbenzene sulfonate, a nonionic or modified nonionic emulsifier of defined formula, a water-soluble wetting agent that is a polyoxyethylene alkylphenol, a first dispersing agent that is a calcium lignin sulfonate, a second dispersing agent that is fumed silica, and an anti-foaming agent. No water-soluble herbicide is disclosed to be present in the aqueous phase.

Brief Summary Text (65):

Additional water-insoluble herbicides that can optionally be included in a contemplated composition are exemplified without restriction by acetonifene, amidosulfuron, anilofos, azafenidin, azimsulfuron, benfluralin, benfuresate, bensulfuron-methyl, bensulide, benzofenap, bifenox, bromobutide, bromofenoxim, butamifos, butralin, butoxydim, butylate, cafenstrole, carbetamide, carfentrazone-ethyl, chlormethoxyfen, chlorbromuron, chloridazon, chlorimuron-ethyl, chlornitrofen, chlorotoluron, chlorpropham, chlorsulfuron, chlorthal-dimethyl, chlorthiamid, cinmethylin, cinosulfuron, clethodim, clodinafop-propargyl, clomazone, clomeprop, cloransulam-methyl, cycloate, cyclosulfamuron, cycloxydim, cyhalofop-butyl, daimuron, desmedipham, dichlobenil, diclofop-methyl, diflufenican, dimefuron, dimepiperate, dinitramine, dinoterb, diphenamid, dithiopyr, diuron, EPTC,

esprocarb, ethalfluralin, ethametsulfuron-methyl, ethofumesate, ethoxysulfuron, etobenzanid, fenoxaprop-ethyl, fenuron, flamprop-methyl, flazasulfuron, fluazifop-butyl, fluchloralin, flumetsulam, flumiclorac-pentyl, flumioxazin, fluometuron, fluorochloridone, fluoroglycofen-ethyl, flupoxam, flurenol, fluridone, fluoxypyr-1-methylheptyl, flurtamone, fluthiacet-methyl, fomesafen, halosulfuron, haloxyfop-methyl, hexazinone, imazosulfuron, indanofan, isoproturon, isouron, isoxaben, isoxaflutole, isoxapyrifop, lactofen, lenacil, linuron, mefenacet, metamitron, methabenzthiazuron, methyldymron, metobenzuron, metobromuron, metosulam, metoxuron, metribuzin, metsulfuron, molinate, monolinuron, naproanilide, napropamide, naptalam, neburon, nicosulfuron, norflurazon, orbencarb, oryzalin, oxadiargyl, oxadiazon, oxasulfuron, oxyfluorfen, pebulate, pendimethalin, pentanochlor, pentoxazone, phenmedipham, piperophos, primisulfuron, prodiamine, propanil, propaquizafop, propham, propyzamide, prosulfocarb, prosulfuron, pyraflufen-ethyl, pyrazolynate, pyrazosulfuron-ethyl, pyrazoxyfen, pyributicarb, pyridate, pyriminobac-methyl, quinclorac, quinmerac, quizalofop-ethyl, rimsulfuron, sethoxydim, siduron, sulcotrione, sulfentrazone, sulfometuron, sulfosulfuron, tebutam, tebuthiuron, terbacil, thiazopyr, thifensulfuron, thiobencarb, tiocarbazil, tralkoxydim, triallate, triasulfuron, tribenuron, trifluralin, triflusulfuron and vernolate.

Current US Cross Reference Classification (2):

504/128

**WEST**

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L17: Entry 12 of 33

File: USPT

Nov 23, 1999

DOCUMENT-IDENTIFIER: US 5990047 A

TITLE: Herbicidal composition comprising

4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]benzoic esters

Brief Summary Text (5):

No biological examples of the compounds listed above individually are mentioned in WO 92/13845. Rather, a general mention is made of the possibility of using the compounds of the formula 1 with other herbicides. This is followed by an exemplary enumeration of more than approximately 250 various standard substances, and amongst those mentioned individually are acifluorfen, alachlor, amidosulfuron, atrazine, bentazone, bifenox, bromoxynil, chlortoluron, chlorsulfuron, dicamba, diclofop-methyl, difenzoquat, diflufenican, fenoxaprop-ethyl, flumetralin, fluoroxyfen-ethyl, fluroxypyr, fomesafen, glufosinate, glyphosate, imazamethabenz-methyl, ioxynil, isoproturon, lactofen, MCPA, mecoprop, methabenzthiazuron, metolachlor, metribuzin, metsulfuron-methyl, pendimethalin, primisulfuron-methyl, terbutylazine, thifensulfuron-methyl, tralkoxydim, triasulfuron and tribenuron-methyl. Neither information with a view to the purposes of a joint application which exceed a mere mention of the substances nor, for example, a motivation for the specific choice and combination of certain active substances can be found in WO 92/13845.

Brief Summary Text (145):

wettable powders (WP), emulsifiable concentrates (EC), water-soluble powders (SP), water-soluble concentrates (SL), concentrated emulsions (BW) such as oil-in-water and water-in-oil emulsions, sprayable solutions or emulsions, capsule suspensions (CS), oil- or water-based dispersions (SC), suspoemulsions, suspension concentrates, dusts (DP), oil-miscible solutions (OL), seed-dressing products, granules (GR) in the form of microgranules, spray granules, coated granules and adsorption granules, granules for soil application or broadcasting, water-soluble granules (SG), water-dispersible granules (WG), ULV formulations, microcapsules and waxes.

Brief Summary Text (149):

The herbicide combinations of the invention are particularly advantageously prepared by formulating the compounds of the formula I or salts thereof (type A compounds) with one or more type B compounds analogously to a customary crop protection formulation from the group comprising water-soluble wettable powders (WP), water-dispersible granules (WDG), water-emulsifiable granules (WEG), suspoemulsions (SE) and oil suspension concentrates (SC).

Brief Summary Text (150):

Wettable powders are preparations which are uniformly dispersible in water and which, besides the active substances, also comprise ionic and/or nonionic surfactants (wetting agents, dispersants), for example polyoxyethylated alkylphenols, polyoxyethylated fatty alcohols and fatty amines, fatty alcohol polyglycol ether sulfates, alkanesulfonates or alkylarylsulfonates, sodium lignosulfonate, sodium 2,2'-dinaphthylmethane-6,6'-disulfonate, sodium dibutyl-naphthalenesulfonate or else sodium oleylmethyltauride, in addition to a diluent or inert substance.

Brief Summary Text (154):

Granules can be prepared either by spraying the active substance, or active substances, on to adsorptive, granulated inert material or by applying active

substance concentrates to the surface of carriers such as sand, kaolinites or granulated inert material with the aid of binders, for example polyvinyl alcohol, sodium polyacrylate or else mineral oils. Water-dispersible granules are prepared, as a rule, by the customary processes such as spray drying, fluidized-bed granulation, disk granulation, mixing using high-speed mixers and extrusion without solid inert material. Suitable active substances can also be granulated in the manner which is customary for the preparation of fertilizer granules, if desired in the form of a mixture with fertilizers.

Brief Summary Text (156):

The concentrations of the active substances A+B in the formulations can vary. In wettable powders, the active substance concentration is, for example, approximately 10 to 95% by weight, the remainder to 100% being composed of customary formulation components. In the case of emulsifiable concentrates, the active substance concentration can be from approximately 1 to 85% by weight, preferably 5 to 80% by weight. Formulations in the form of dusts comprise approximately 1 to 25% by weight, in most cases 5 to 20% by weight, of active substances, sprayable solutions approximately 0.2 to 25% by weight, preferably 2 to 20% by weight, of active substances. In granules, such as dispersible granules, the active substance content depends partly on whether the active compound is in liquid or solid form and on which granulation auxiliaries and fillers are used. As a rule, the content in the water-dispersible granules is between 10 and 90% by weight.

Brief Summary Text (160):

For use, the formulations, which are in commercially available form, are, if appropriate, diluted in the customary manner, for example using water in the case of wettable powders, emulsifiable concentrates, dispersions and water-dispersible granules. Preparations in the form of dusts, soil granules, granules for broadcasting and sprayable solutions are conventionally not diluted further with other inert substances prior to use.

Detailed Description Text (4):

b) A wettable powder which is readily dispersible in water is obtained by mixing 25 parts by weight of active substances A+B, 64 parts by weight of kaolin-containing quartz as inert substance, 10 parts by weight of potassium lignosulfonate and 1 part by weight of sodium oleoylemethyltaurinate as wetting agent and dispersant and grinding the mixture in a pinned-disk mill.

Detailed Description Text (7):

e) Water-dispersible granules are obtained by mixing 75 parts by weight of active substances A+B, 10 parts by weight of calcium lignosulfonate, 5 parts by weight of sodium lauryl sulfate, 3 parts by weight of polyvinyl alcohol and 7 parts by weight of kaolin, grinding the mixture in a pinned-disk mill and granulating the powder in a fluidized bed by spraying on water as the granulation liquid.

Detailed Description Text (8):

f) Water-dispersible granules are also obtained by homogenizing and precommuniting, in a colloid mill, 25 parts by weight of active substances A+B, 5 parts by weight of sodium 2,2'-dinaphthylmethane-6,6'-disulfonate, 2 parts by weight of sodium oleoylemethyltaurinate, 1 part by weight of polyvinyl alcohol, 17 parts by weight of calcium carbonate and 50 parts by weight of water, subsequently grinding the mixture in a bead mill and atomizing and drying the resulting suspension in a spray tower by means of a single-substance nozzle.

Current US Cross Reference Classification (2):

504/129

Current US Cross Reference Classification (4):

504/133

Current US Cross Reference Classification (6):

504/136

Current US Cross Reference Classification (18):

504/367

## CLAIMS:

15. A process for the preparation of a composition as claimed in claim 13, which comprises formulating at least one compound of formula I or salts thereof with at least one group B herbicide to a crop protection formulation selected from the group consisting of wettable powders, emulsifiable concentrates, aqueous solutions, emulsions, sprayable solutions (tank mix), oil- or water-based dispersions, suspoemulsions, dusts, seed-dressing products, granules for soil treatment or broadcasting, water-dispersible granules, ULV formulations, microcapsules and waxes.

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L17: Entry 15 of 33

File: USPT

Jul 20, 1999

DOCUMENT-IDENTIFIER: US 5925596 A

TITLE: Substituted aminomethylphenylsulfonyleureas their preparation and their use as herbicides and plant growth regulators

Brief Summary Text (117):

The compounds of the formula (I) can be formulated in various ways, depending on the prevailing biological and/or chemico-physical parameters. The following possibilities are suitable formulations: wettable powders (WP), water-soluble powders (SP), water-soluble concentrates, emulsifiable concentrates (EC), emulsions (EW), such as oil-in-water and water-in-oil emulsions, sprayable solutions, suspension concentrates (SC), oil- or water-based dispersions, solutions which are miscible with oils, capsule suspensions (CS), dusts (DP), seed-dressing products, granules for broadcasting and soil application, granules (GR) in the form of microgranules, spray granules, coated granules and adsorption granules, water-dispersible granules (WG), water-soluble granules (SG), ULV formulations, microcapsules and waxes.

Brief Summary Text (121):

Wettable powders are preparations which are uniformly dispersible in water and which, besides the active substance, also comprise ionic and/or non-ionic surfactants (wetting agents, dispersants), for example polyoxethylated alkylphenols, polyoxethylated fatty alcohols, polyoxethylated fatty amines, fatty alcohol polyglycol ether sulfates, alkanesulfonates, alkylbenzenesulfonates, sodium lignosulfonate, sodium 2,2'-dinaphthylmethane-6,6'-sulfonate, sodium dibutyl-naphthalenesulfonate or else sodium oleoylmethyltaurate, in addition to a diluent or inert substance. To prepare the wettable powders, the herbicidally active substances are ground finely, for example in customary equipment such as hammer mills, blower mills and air-jet mills, and simultaneously or subsequently mixed with the formulation auxiliaries.

Brief Summary Text (127):

Water-dispersible granules are generally prepared by the customary processes such as spray drying, fluidized-bed granulation, disk granulation, mixing with high-speed mixers and extrusion without solid inert material.

Brief Summary Text (130):

As a rule, the agrochemical preparations comprise 0.1 to 99% by weight, in particular 0.1 to 95% by weight, of active substance of the formula (I). The active substance concentration in wettable powders is, for example, approximately 10 to 90% by weight, the remainder to 100% by weight being composed of customary formulation components. In the case of emulsifiable concentrates, the active substance concentration may amount to approximately 1 to 90, preferably 5 to 80%, by weight. Formulations in the form of dusts comprise 1 to 30% by weight of active substance, in most cases preferably 5 to 20% by weight of active substance, and sprayable solutions comprise approximately 0.05 to 80, preferably 2 to 50%, by weight of active substance. The active substance content of water-dispersible granules depends partly on whether the active compound is in liquid or solid form and on which granulation auxiliaries, fillers and the like are being used. The active substance content of the water-dispersible granules amounts to, for example, between 1 and 95% by weight, preferably between 10 and 80% by weight.

Brief Summary Text (132):



Components which can be used in combination with the active substances according to the invention in mixed formulations or in the tank mix are, for example, known active substances as they are described, for example, in Weed Research 26, 441-445 (1986), or "The Pesticide Manual", 10th edition, The British Crop Protection Council and the Royal Soc. of Chemistry, 1994, and the literature cited therein. Examples of active substances which may be mentioned as herbicides which are known from the literature and which can be combined with the compounds of the formula (I) are the following (note: either the common names in accordance with the International Organization for Standardization (ISO) or the chemical names, if appropriate together with a customary code number, of the compounds are given): acetochlor; acifluorfen; aclonifen; AKH 7088, ie.

[[[1-[5-[2-chloro-4-(trifluoromethyl)phenoxy]-2-nitrophenyl]-2-methoxyethylidene]amino]oxy]acetic acid and its methyl ester; alachlor; alloxydim; ametryn; amidosulfuron; amitrol; AMS, ie. ammonium sulfamate; anilofos; asulam; atrazine; azimsulfuron (DPX-A8947); aziprotryn; barban; BAS 516 H, ie. 5-fluoro-2-phenyl-4H-3,1-benzoxazin-4-one; benazolin; benfluralin; benfuresate; bensulfuron-methyl; bensulide; bentazone; benzofenap; benzofluor; benzoxyprop-ethyl; benzthiazuron; bialaphos; bifenox; bromacil; bromobutide; bromofenoxim; bromoxynil; bromuron; burinafos; busoxinone; butachlor; butamifos; butenachlor; buthidazole; butralin; butylate; cafenstrole (CH-900); carbetamide; cafentrazone (ICI-A0051); CDAA, ie. 2-chloro-N,N-di-2-propenylacetamide; CDEC, ie. 2-chloroallyl diethyldithiocarbamate; chlormethoxyfen; chloramben; chlorazifop-butyl, chlormesulon (ICI-A0051); chlorbromuron; chlorbufam; chlorfenac; chlorflurecol-methyl; chloridazon; chlorimuron-ethyl; chlornitrofen; chlorotoluron; chloroxuron; chlorpropham; chlorsulfuron; chlorthal-dimethyl; chlorthiamid; cinmethylin; cinosulfuron; clethodim; clodinafop and its ester derivatives (for example clodinafop-propargyl); clomazone; clomeprop; cloproxydim; clopyralid; cumyluron, (JC 940); cyanazine; cycloate; cyclosulfamuron (AC 104); cycloxydim; cycluron; cyhalofop and its ester derivatives (for example butyl ester, DEH-112); cyperquat; cyprazine; cyprazole; daimuron; 2,4-DB; dalapon; desmedipham; desmetryn; di-allate; dicamba; dichlobenil; dichlorprop; diclofop and its esters, such as diclofop-methyl; diethatyl; difenoxuron; difenzoquat; diflufenican; dimefuron; dimethachlor; dimethametryn; dimethenamid (SAN-582H); dimethazone; clomazon; dimethipin; dimetrasulfuron; dinitramine; dinoseb; dinoterb; diphenamid; dipropetryn; diquat; dithiopyr; diuron; DNOC; eglinazone-ethyl; EL 77, ie. 5-cyano-1-(1,1-dimethylethyl)-N-methyl-1H-pyrazole-4-carboxamide; endothal; EPTC; esprocarb; ethalfluralin; ethametsulfuron-methyl; ethidimuron; ethiozin; ethofumesate; F5231, ie.

N-[2-chloro-4-fluoro-5-[4-(3-fluoropropyl)-4,5-dihydro-5-oxo-1H-tetrazol-1-yl]phenyl]ethanesulfonamide; ethoxyfen and its esters (for example ethyl ester, HN-252); etobenzanid (HW 52); fenoprop; fenoxan, fenoxaprop and fenoxaprop-P and their esters, for example fenoxaprop-P-ethyl and fenoxaprop-ethyl; fenoxylid; fenuron; flamprop-methyl; flazasulfuron; fluazifop and fluazifop-P and their esters, for example fluazifop-butyl and fluazifop-P-butyl; fluchloralin; flumetsulam; flumeturon; flumiclorac and its esters (for example pentyl ester, S-23031); flumioxazin (S-482); flumipropyn; flupoxam (KNW-739); fluorodifen; fluoroglycofen-ethyl; flupropacil (UBIC-4243); fluridone; flurochloridone; fluroxypyr; flurtamone; fomesafen; fosamine; furyloxyfen; glufosinate; glyphosate; halosafen; halosulfuron and its esters (for example methyl ester, NC-319); haloxyfop and its esters; haloxyfop-P (=R-haloxyfop) and its esters; hexazinone; imazamethabenz-methyl; imazapyr; imazaquin and salts, such as the ammonium salt; imazethamethapyr; imazethapyr; imazosulfuron; ioxynil; isocarbamid; isopropalin; isoproturon; isouron; isoxaben; isoxapyrifop, karbutilate; lactofen; lenacil; linuron; MCPA; MCPB; mecoprop; mefenacet; mefluidid; metamitron; metazachlor; methabenzthiazuron; metham; methazole; methoxyphenone; methyldymron; metabenzuron; methobenzuron; metobromuron; metolachlor; metosulam (XRD 511); metoxuron; metribuzin; metsulfuron-methyl; MH; molinate; monalide; monocarbamide dihydrogensulfate; monolinuron; monuron; MT 128, ie.

6-chloro-N-(3-chloro-2-propenyl)-5-methyl-N-phenyl-3-pyridazinamine; MT 5950, ie. N-[3-chloro-4-(1-methylethyl)phenyl]-2-methylpentanamide; naproanilide; napropamide; naptalam; NC 310 ie. 4-(2,4-dichlorobenzoyl)-1-methyl-5-benzyloxypyrazole; neburon; nicosulfuron; nipyracllophen; nitralin; nitrofen; nitrofluorfen; norflurazon; orbencarb; oryzalin; oxadiargyl (RP-020630); oxadiazon; oxyfluorfen; paraquat; pebulate; pendimethalin; perfluidone; phenisopham; phenmedipham; picloram; piperophos; piributicarb; pirifenop-butyl; pretilachlor; primsulfuron-methyl;

procyazine; prodiamine; profluralin; proglinazine-ethyl; prometon; prometryn; propachlor; propanil; propaquizafop and its esters; propazine; propham; propisochlor; propyzamide; prosulfalin; prosulfocarb; prosulfuron (CGA-152005); prynachlor; pyrazolate; pyrazon; pyrazosulfuron-ethyl; pyrazoxyfen; pyridate; pyriothobac (KIH-2031); pyroxyfop and its esters (for example propargyl ester); quinclorac; quinmerac; quinoxifop and its ester derivatives, quinoxifop and quinoxifop-P and their ester derivatives, for example quinoxifop-ethyl; quinoxifop-P-tefuryl and -ethyl; renniduron; rimsulfuron (DPX-E 9636); S 275, ie. 2-[4-chloro-2-fluoro-5-(2-propynyloxy)phenyl]-4,5,6,7-tetrahydro-2H-indazole; sebumeton; sethoxydim; siduron; simazine; simetryn; SN 106279, ie. 2-[[7-[2-chloro-4-(trifluoromethyl)phenoxy]-2-naphthalenyl]oxy]propanoic acid and its methyl ester; sulfentrazone (FMC-97285, F-6285); sulfazuron; sulfometuron-methyl; sulfosate (ICI-A0224); TCA; tebutam (GCP-5544); tebuthiuron; terbacil; terbucarb; terbutylchlor; terbuturon; terbuthylazine; terbutryn; TFH 450, ie. N,N-diethyl-3-[(2-ethyl-6-methylphenyl)sulfonyl]-1H-1,2,4-triazole-1-carboxamide; thenylchlor (NSK-850); thiazafuron, thiazopyr (Mon-13200); thidiazimine (SN-24085); thifensulfuron-methyl; thiobencarb; tiocarbazil; tralkoxydim; tri-allate; triasulfuron; triazofenamide; tribenuron-methyl; triclopyr; tridiphane; trietazine; trifluralin; triflurosulfuron and esters (for example methyl ester, DPX-66037); trimeturon; tsitodef; vernolate; WL 110547, ie. 5-phenoxy-1-[3-(trifluoromethyl)phenyl]-1H-tetrazole; UBH-509; D-489; LS 82-556; KPP-300; NC-324; NC-330; KH-218; DPX-N8189; SC-0774; DOWCO-535; DK-8910; V-53482; PP-600; MBH-001; KIH-9201; ET-751; KIH-6127 and KIH-2023.

Brief Summary Text (133):

For use, the formulations, which are in commercially available form, are, if appropriate, diluted in the customary manner, for example using water in the case of wettable powders, emulsifiable concentrates, dispersions and water-dispersible granules. Preparations in the form of dusts, granules for soil application or for broadcasting and sprayable solutions are conventionally not diluted any further with inert substances prior to use.

Detailed Description Text (69):

b) A wettable powder which is readily dispersible in water is obtained by mixing 25 parts by weight of a compound of the formula (I), 64 parts by weight of kaolin-containing quartz as inert substance, 10 parts by weight of potassium lignosulfonate and 1 part by weight of sodium oleoylmethyltaurate as wetting agent and dispersant, and grinding the mixture in a pinned-disk mill.

Detailed Description Text (79):

f) Water-dispersible granules are also obtained by homogenizing, on a colloid

Current US Cross Reference Classification (1):

504/136

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L17: Entry 23 of 33

File: USPT

Mar 30, 1999

DOCUMENT-IDENTIFIER: US 5888931 A

TITLE: Potentiating herbicidal compositions of auxin transport inhibitors and substituted urea herbicides

Brief Summary Text (16):

6. amino acid synthesis inhibitors, including a) glyphosate; glufosinate b) sulfonyl-ureas, e.g. metsulfuron, metsulfuron-methyl, ethametsulfuron, nicosulfuron, triasulfuron, primisulfuron, bensulfuron, chlorimuron, chlorimuron-ethyl, chlorsulfuron, sulfometuron, thifensulfuron, tribenuron, triflusaluron, clopyrasulfuron and pyrazasulfuron; c) sulfonamides, e.g. flumetsulam (a.k.a. DE498); d) imidazolinones, e.g. imazaquin, imazamethabenz, imazapyr, imazethapyr;

Brief Summary Text (31):

Particular formulations, to be applied in spraying forms such as water dispersible concentrates, water dispersible granules, or wettable powders, may contain surfactants such as wetting and dispersing agents, e.g. the condensation product of formaldehyde with naphthalene sulphonate, an alkylarylsulphonate, a lignin sulphonate, a fatty alkyl sulphate, an ethoxylated alkylphenol, a Urea/Ammonium Nitrate mix, a methylated vegetable oil (e.g. SCIL.RTM.--Agasco Inc., Grand Ford, N. Dak.), an alkylpolyoxyethylene glycol (e.g. X77-Valent, Walnut Creek, Calif.) a buffered crop oil (e.g. DASH.RTM., BASF Corp., Parsippany, N.J.) or an ethoxylated fatty alcohol.

Current US Cross Reference Classification (1):

504/129

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L17: Entry 30 of 33

File: USPT

Feb 3, 1998

DOCUMENT-IDENTIFIER: US 5714157 A

TITLE: Water-dispersible granular agricultural compositions made by heat extrusionAbstract Text (1):

Rapidly disintegrating water-dispersible granular agricultural compositions comprising by weight based on the total weight of the composition (a) 0.01-80% of one or more active ingredients, (b) 0.004-60% of a base, (c) 5-95% of urea, (d) 1-30% of one or more urea modifiers and (e) optionally one or more additives selected from wetting agents, dispersants, lubricants, anti-caking agents, chemical stabilizers, and inert diluents that are formed by extrusion.

Brief Summary Text (2):

The present invention pertains to rapidly disintegrating water-dispersible granular compositions comprising active ingredients of value in agriculture.

Brief Summary Text (3):

Water-dispersible granular compositions are becoming increasingly popular in agriculture. Accordingly, it is advantageous to discover improved compositions and methods of production. Most granulation methods in current use, generally referred to herein as wet granulation, require introduction of water for granulation and then a drying step to remove the water. The drying step is expensive, time-consuming and may create dust, and it would be advantageous if granulation could be accomplished without water.

Brief Summary Text (5):

World Patent WO 92/15197 discloses water-dispersible granular compositions of agricultural active ingredients which were made by heat extrusion. Granulation is accomplished by the fusion of heat-sensitive components; no water is added and no drying step is required. A limitation of the granular compositions of this art though is that they require incorporation of effervescence in order to disintegrate in water as rapidly as granular compositions made by wet granulation. The problem with effervescent ingredients is that they are very sensitive to moisture and tend to react prematurely during manufacture and storage. Extra precautions in handling must be taken, and shelf-life may be limited.

Brief Summary Text (8):

The invention is a rapidly disintegrating water dispersible granular composition for agricultural applications. The composition comprises by weight based on the total weight of the composition:

Brief Summary Text (23):

In recent years formulations based on water-dispersible granules have become increasingly popular because they offer several advantages over other types of agricultural formulations. They are more stable during storage and transport than aqueous suspension concentrates which can settle. They are convenient to handle and measure and are relatively dust-free in comparison to wettable powders. And they avoid the toxicity, environmental and odor problems associated with solvent-based formulations such as emulsion concentrates and organic suspension concentrates.

Brief Summary Text (24):

make water-dispersible granules useful for application they are usually diluted a mix tank containing water to make a solution or dispersion which can be

sprayed. The dispersed particles should be no larger than 50.mu. in their largest dimension to avoid nozzle pluggage or premature settling which results in uneven application of the pesticide. It is therefore necessary that the granular composition rapidly and completely disintegrates in the dilution water. We refer to all granular compositions of the present invention as water-dispersible even though they may be totally water-soluble when diluted.

#### Brief Summary Text (25):

Conventional wet granulation methods for preparing water-dispersible granule compositions involve (1) water-spraying in fluidized bed or pan granulation equipment, (2) spray-drying, (3) extrusion of a water-wet paste, and (4) dry compaction. Granules prepared by fluid-bed, spray-drying or pan granulation use water in the granulation step which must be removed later; however, such granules will generally disintegrate rapidly when diluted in water. Dry compaction of noneffervescent compositions and paste extrusion generally do not produce rapidly disintegrating granules, and paste extrusion also requires a drying step.

#### Brief Summary Text (26):

The present invention comprises noneffervescent water-dispersible granular compositions and a process of extruding dry premixes of these compositions through a die or screen at elevated temperature and chopping, sieving or breaking the extruded material to form granular compositions that disintegrate rapidly in water.

#### Brief Summary Text (32):

Agricultural active ingredients include herbicides, fungicides, bactericides, insecticides, insect antifeedants, acaricides, miticides, nematocides, and plant growth regulants. The active ingredient may be water-soluble or water-insoluble and should be chemically stable in the extrusion temperature range. It is preferred that the melting point of the active ingredient is above the extrusion temperature; lower melting active ingredients may be used but they may require a carrier. Examples of suitable active ingredients include the following: Herbicides such as acifluorfen, asulam, atrazine, bensulfuron methyl, bentazon, bromacil, bromoxynil, hydroxybenzotriazole, chloramben, chlorimuron ethyl, chloroxuron, chlorsulfuron, chlortoluron, cyanazine, dazomet, desmediphan, dicamba, dichlorbenil, dichlorprop, diphenamid, dipropetryn, diuron, thiameturon, fenac, renuton, fluometuron, fluridone, fomesafen, glyphosate, hexazinone, imazamethabenz, imazaquin, imazethapyr, ioxynil, isoproturon, isouron, isoxaben, karbutilate, lenacil, MCPA, MCPB, mefenacet, mefluidide, methabenzthiazuron, methazole, metribuzin, metsulfuron methyl, monuron, naptalam, neburon, nitratin, norflurazon, oryzalin, perfluidone, phenmedipham, picloram, prometryn, pronamide, propanil, propazine, pyrazon, rimisulfuron, siduron, simazine, sulfometuron methyl, tebuthiuron, terbacyl, terbuthylazine, terbutryn, thifensulfuron methyl, triclopyr, 2,4-D, 2,4-DB, triasulfuron, wibenuron methyl, triflusaluron, primisulfuron, pyrazosulfuron ethyl, nicosulfuron, ethametsulfuron methyl, 2-[2,4-dichloro-5-[(2-propynyl)oxy]phenyl-5,6,7,8-tetrahydro-1,2,4-triazol-4-yl]-pyridin-3-yl)-one, methyl 2-[[[(4,6-dimethoxy-2-pyrimidinyl)amino]carbonyl]amino]sulfonyl]-6-(trifluoromethyl)-3-pyridinecarboxylate sodium salt, N-[(4,6-dimethoxypyrimidin-2-yl)aminocarbonyl]-1-methyl-4-(2-methyl-2H-tetrazol-5-yl)-1H-pyrazole-5-sulfonamide and N-[(4,6-dimethoxypyrimidin-2-yl)aminocarbonyl]-1-methyl-4-ethoxycarbonyl-5-pyrazolesulfonamide; fungicides such as carbendazim, thiuram, riadine, chloroneb, captan, folpot, thiophanatemethyl, thiabendazole, chlorothalonil, dichloran, captafol, iprodione, vinclozolin, kasugamycin, triadimenol, flutriafol, flusilazol, hexaconazole, and fenarimol; bactericides such as oxytetracycline dihydrate; acaricides such as hexathizox, oxythioquinox, dienochlor, and cyhexatin; and insecticides such as carbofuran, carbaryl, thiodicarb, deltamethrin, and tetrachlorvinphos. Active ingredient also include the salts of the active ingredients.

#### Brief Summary Text (34):

Preferred combinations of active ingredients include metsulfuron methyl with one or more of the following: chlorimuron ethyl; bensulfuron methyl; propanil; MCPA; 2,4-D; glyphosate; triasulfuron. Further preferred combinations include bensulfuron methyl with one or more of the following: propanil; mefenacet;

N-[(4,6-dimethoxypyrimidin-2-yl)aminocarbonyl]-1-methyl-4-ethoxycarbonyl-5-pyrazolesulfonamide;  
N-[(4,6-dimethoxypyrimidin-2-yl)aminocarbonyl]-1-methyl-4-(2-methyl-2H-tetrazol-5-yl)-1H-pyrazole-5-sulfonamide. Most preferred are metsulfuron methyl and bensulfuron methyl.

Detailed Description Text (46):

This example illustrates triflusaluron as active ingredient. Uses linear alcohol ethoxylate as only urea modifier. Also illustrates rapid dispersion without use of a base.

Current US Cross Reference Classification (4):

504/367

CLAIMS:

1. Rapidly disintegrating water dispersible granular agricultural compositions which disperse in water to form particles no greater than 50 microns consisting of by weight based on the total weight of the composition,

(a) 0.01-80% of one or more active ingredients selected from herbicides, insecticides and fungicides which are poorly water soluble having melting points above or below the extrusion temperature and which when water soluble have melting points above the extrusion temperature,

(b) 0.004-60% of a base which renders the poorly soluble active ingredient water-soluble as a salt,

(c) 5-95% of urea,

(d) 1-30% of one or more urea modifiers which when mixed with urea allow the extrusion process to proceed at temperatures much lower than the melting point of urea alone,

(e) 0-10% of one or more additives selected from the group consisting of wetting agents, dispersants, lubricants, anticaking agents and chemical stabilizers, and

(f) 0-60% of inert diluents the sum of all ingredients totaling 100%.

6. The composition of claim 1 wherein the active ingredients are metsulfuron methyl and bensulfuron methyl.

10. A process for preparing a rapidly disintegrating water-dispersible granular composition comprising

(a) extruding the composition of claim 1 through a die or a screen at elevated temperatures and

(b) cutting, breaking or sieving the extruded strands to form granules.

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File: USPT

Dec 13, 1994

DOCUMENT-IDENTIFIER: US 5372989 A

**\*\* See image for Certificate of Correction \*\***TITLE: Water-dispersible or water-soluble pesticide granules from heat-activated bindersAbstract Text (1):

Low cost, rapidly water-dispersible or water-soluble granular compositions containing at least 10% voids and consisting of agglomerates comprised of pesticidal particles bonded together by solid bridges of a water-soluble heat-activated binder.

Brief Summary Text (2):

In general, water-dispersible or water-soluble granular compositions are prepared by (1) processes involving aqueous (or solvent) spraying and subsequent drying such as pan or fluidized bed granulation, high intensity mixing, granulation, spray drying, or by spraying the active material (or solution thereof) upon a preformed carrier or (2) processes involving compaction such as briquetting, tableting, and extrusion.

Brief Summary Text (6):

This invention comprises a low cost, rapidly water-dispersible or water-soluble pesticidal granular composition which is comprised of agglomerates consisting essentially of solid pesticidal particles bound together by solid bridges of a water-soluble heat activated binder (HAB). The granular composition contains at least about 10% voids (preferably 20% or greater) and comprises by weight based on the total weight of the composition;

Detailed Description Text (2):

The most common method of applying agricultural pesticides involves their dilution in a solvent or non-solvent liquid in a mix tank followed by spraying of the resulting solution or dispersion. Because of the increasing costs of non-aqueous solvents and the toxicity of some of them, formulations involving water-soluble or water-dispersible granules have become increasingly popular. In such formulations, the dispersed particles formed on dilution should be no greater than 50 microns in their largest dimension to avoid nozzle pluggage or premature settling which results in uneven application of the pesticide. Consequently, it is necessary that all of the components of the formulated product rapidly and completely disperse or dissolve in the dilution water.

Detailed Description Text (3):

Conventional methods for the preparation of water-soluble or water-dispersible granules involve (1) solvent spraying such as fluidized bed or pan granulation techniques or the impregnation of an active pesticide agent on preformed carrier granules or (2) compaction such as tableting or extrusion. Granules prepared by bed or pan granulation are generally sprayable upon dilution with water, while the impregnated or compacted compositions are usually applied dry and mechanically, for example, using spreaders. The solvent spraying processes can yield granules which are rapidly water-dispersible but are expensive, due to the drying step and extensive, space-consuming equipment required. The granules produced from the compaction processes are generally slow in water dispersion. Furthermore, both of these processes often require specialized technology for their operation.

Detailed Description Text (5):

The present invention comprises low cost, rapidly water-dispersible or water-soluble granular compositions consisting of agglomerates comprised of pesticidal particles bonded together by solid bridges of the heat-activated binder (HAB). The granules have 10% voids or more, and have a preferred size of 150 to 4,000 microns. The preferred size of pesticidal particles is 1 to 50 microns, especially for pesticides with low water-solubility, to promote water dispersion, avoid premature settling, and avoid nozzle/screen pluggage during tank-mixing or application in the field. Water-soluble pesticidal particles may be larger.

Detailed Description Text (30):

Examples of preferred dispersants include sodium or ammonium salts of sulfonated naphthalene (or methyl naphthalene)-formaldehyde condensates, sodium, calcium, or ammonium salts of ligninsulfonates (optionally polyethoxylated); dialkyl; diolalkynes; sodium taurates; and sodium or ammonium salts of maleic anhydride copolymers.

Detailed Description Paragraph Table (1):

TABLE 1	Cm- Cmpd. No.	Common Name
m.p. (.degree.C.)	Chemical Name	HERBICIDES 1
acifluorfen 142-160	5-[-chloro-4-(trifluoro methyl)phenoxy]-2-nitro-	benzoic acid 2
asulam 142-144	methyl [(4-aminophenyl)- sulfonyl]carbamate 3	atrazine 175-177
6-chloro-N-ethyl-N'-(1- methylethyl)-1,3,5- triazine-2,4-diamine 4		<u>bensulfuron</u>
185.188 2-[[[(4,6-dimethoxy-2- methyl pyrimidinyl)aminol]- carbonyl]amino]sulfonyl]- methyl]benzoic acid, methyl ester 5		bentazon 137-139
3-(1-methylethyl)-(1H)-2,1,3- benzothiadiazin-4(3H)-one, 2,2- di- oxide 6		bromacil
158-159 5-bromo-6-methyl-3-(1- methyl-propyl)- 2,4(1H,3H)pyrimi- dinedione 7		
bromoxynil 194-195 3,5-dibromo-4-hydroxybenzo- nitrile 8		chloramben 200-201
3-amino-2,5-dichlorobenzoic acid 9	chlorimuron >100 2-[[[(4-chloro-6-methoxy-2- ethyl pyrimidinyl)amino]carbonyl]- amino]sulfonyl]benzoic acid, ethyl ester 10	
chloroxuron 151-152 N'-[4-(4-chlorophenoxy)- phenyl]N,N-dimethylurea 11		
chlorsulfuron 174-178 2-chloro-N-[[[(4-methoxy-6- methyl-1,3,5-triazin-2-yl)- amino]carbonyl]benzene- sulfonamide 12		chlortoluron 147-148
N'-(3-chloro-4-methylphenyl)- N,N-dimethylurea 13		clomazone oil
2-[(2-chlorophenyl)methyl]- 4,4-dimethyl-3-isoxazoli- dinone 14		cyanazine 166-167
2-[[[(4-chloro-6-(ethylamino)- 1,3,5-triazin-2-yl]amino]- 2-methylpropanenitrile 15		
dazomet 104-105 tetrahydro-3,5-dimethyl-2H- 1,3,5-thiadiazine-2-thione 16		
desmediphan 120 ethyl [3-[[[(phenylamino)- carbonyl]oxy]- phenyl]-carbamate 17		
dicamba 114-116 3,6-dichloro-2-methoxy- benzoic acid 18		dichlobenil 139-145
2,6-dichloro- benzonitrile 19	dichlorprop 117-118 (.+.-)-2-(2,4-dichloro- phenoxy)-propanoic acid 20	diphenamid 134-135 N,N-dimethyl-.alpha.- phenylbenzene- acetamide 21
dipropetryn 104-106 6-(ethylthio)-N,N'-bis(1- methylethyl)-1,3,5- triazine-2,4-diamine 22	diuron 158-159 N'-(3,4-dichlorophenyl)-N,N- dimethylurea 23	
thiameturon >100 3-[[[(4-methoxy-6-methyl- 1,3,5-triazin-2-yl)amino]- carbonyl]amino]sulfonyl]- 2-thiophenecarboxylic acid, methyl ester 24	-- >100 2-[[[(N-(4-methoxy-6-methyl- 1,3,5-triazine-2-yl)-N- methylaminolcarbonyl]- amino]sulfonyl]benzoic acid, methyl ester 25	fenac 156 2,3,6-trichlorobenzeneacetic acid 26
fenuron 133-134 N,N-dimethyl-N'-phenylurea 27		fluometuron 163-164
N,N-dimethyl-N'-[3-(trifluoro- methyl)phenyl]urea 28		fluridone 151.154
1-methyl-3-phenyl-5-[3-(tri- fluoromethyl)phenyl]- 4(1H)-pyridinone 29		fomesafen
220-221 5-[2-chloro-4-(trifluoro- methyl)phenoxy]-N-(methyl- sulfonyl)-2-nitrobenzamide 30		glyphosate 200-N-(phosphonomethyl)glycine 31
hexazinone 115-117 3-cyclohexyl-6-(dimethyl- amino)-1-methyl-1,3,5- triazine-2,4(1H,3H)-dione 32		imazamethabenz >100 6-(4-isopropyl-4-methyl- 5-oxo-2-imidazolin-2-yl)- .sub.-- m-toluic acid, methyl ester and 6-(4-isopropyl-4-methyl 5-ozo-2-imidazolin-2-yl)- -p-toluic acid, methyl ester 33
imazaquin 219-222 2-[4,5-dihydro-4-methyl-4- (1-methylethyl)-5-ozo-1H- imidazol-2-yl]-3-quinoline- carboxylic acid 34		imazethapyr 172-175
(.+.-)-2-[4,5-dihydro-4-methyl-4- (1-methylethyl)-5-oxo-1H- imidazol-2-yl]-5-ethyl- 3-pyridinecarboxylic acid 35		ioxynil 209 4-hydroxy-3,5-diiodobenzo- nitrile 36
isoproturon 155-156 N-(4-isopropylphenyl)- N',N'-dimethylurea 37		isouron 119-120
N'-[5-(1,1-dimethylethyl)-3- isoxazolyl]-N,N-dimethylurea 38		isoxaben 176-179
N-[3-(1-ethyl-1-methyl- propyl)-5-isoxazolyl]- 2,6-dimethoxy-benzamide 39		
karbutilate 176-178 3-[[[(dimethylamino)carbonyl]- amino]phenyl-(1,1-dimethyl- ethyl) carbamate 40		lenacil 316-317 3-cyclohexyl-6,7- dihydro-1H-cyclopenta-



pyrimidine-2,4-(3H,5H)dione 41 MCPA 100-115 (4-chloro-2-methyl- phenoxy)-acetic acid 42 MCPB 100 4-(4-chloro-2-methyl- phenoxy)-butanoic acid 43 mefluidide 183-185 N-([2,4-dimethyl-5-[[[(tri- fluoromethyl)sulfonyl]- amino]phenyl]acetamide 44 methabenz- 119-120 1,3-dimethyl-3-(2-benzothia- thiazuron zoly)urea 45 mothazole 123-124 2-(3,4-dichlorophenyl)-4- methyl-1,2,4-oxadiazol- idine-3,5-dione 46 metribuzin 125-126 4-amino-6-(1,1-dimethyl- ethyl)-3-(methylthio)-1,2,4-triazin-5(4H)-one 47 metsulfuron 163-166 2- [[[(4-methoxy-6-methyl- methyl 1,3,5-triazin-2-yl)amino]- carbanyl]amino]sulfonyl]- benzoic acid, methyl ester 48 monuron 174-175 N'-(4-chlorophenyl)-N,N- dimethylurea 49 naptalam 185 2-[(1-naphthalenylamino)- carbonyl]benzoic acid 50 neburon 102-103 1-butyl-3-(3,4-dichloro- phenyl)-1-methylurea 51 nitralin 151-152 4-(methylsulfonyl)- 2,6-dinitro-N,N-dipropyl- aniline 52 norflurazon 174-180 4-chloro-S-(methyl- amino)-2- [3-(trifluoro- methyl)phenyl]- 3(2H)-pyridazinone 53 oryzalin 141-142 4-(dipropylamino)-3,5- dinitrobenzenesulfonamide 54 perfluidone 142-144 1,1,1-trifluoro-N-[2-methyl- 4-(phenylsulfonyl)phenyl]- methanesulfonamide 55 phenmedipham 143-144 3-[(methoxycarbonyl)amino]- phenyl (3-methylphenyl)- carbamate 56 picloram >215 4-amino-3,5,6-trichloro-2- (DEC) pyridinecarboxylic acid 57 prometryn 118-120 N,N'-bis(1-methylethyl)-6-(methylthio)-1,3,5-triazine- 2,4-diamine 58 pronamide 155-156 3,5-dichloro-N-(1,1-dimethyl- 2-propynyl)benzamide 59 propazine 212-214 6-chloro-N,N'-bis(1-methyl- ethyl)-1,3,5-triazine- 2,4-diamine 60 pyrazon 205-206 5-amino-4-chloro-2-phenyl- 3(2H)pyridazinone 61 siduron 133-138 N-(2-methylcyclohexyl)-N'- phenylurea 62 simazine 225-227 6-chloro-N,N'-diethyl-1,3,5- triazine-2,4-diamine 63 sulfometuron 182-189 2-[[[(4,6-dimethyl-2- methyl pyrimidinyl)amino]carbonyl]- amino]sulfonyl]benzoic acid, methyl ester 64 tebuthiuron 161-164 N-[5-(1,1-dimethylethyl)- 1,3,4-thiadiazol-2-yl]- N,N'-dimethylurea 65 terbacyl 175-177 5-chloro-3-(1,1-dimethyl- ethyl)-6-methyl-2,4(1H,3E)- pyrimidinedione 66 terbuthyl- 177-179 2-(tert-butylamino)-4-chloro- azine 6-(ethyl-amino)- .sub.- s-triazine 67 terbutryn 104-105 N-(1,1-dimethylethyl)-N'- ethyl-6-(methylthio)-1,3,5- triazine-2,4-diamine 68 triclopyr 148-150 [(3,5,6-trichloro-2-pyri- danyl)oxy]acetic acid 69 2,4-D 140 (2,4-dichlorophenoxy)acetic acid 70 2,4-DB 119-120 4-(2,4-dichlorophenoxy)- butanoic acid 71 triasulfuron >100 (3-(6-methoxy-4-methyl-1,3,5- triazin-2-yl)-1-[2-(2- chloroethoxy)phenylsulfonyl] urea 72 primisulfuron >100 [2-/3-(4,6-bis(difluoro- methoxypyrimidin-2-yl- ureidosulfonyl)benzoic acid methylester] 73 -- >100 [2-/3-(4,6-bis(difluoro- methoxy)-pyrimidin-2-yl)- ureidosulfonyl)-benzoic acid methylester] 74 NC-311 170-172 [5-pyrazolesulfonamide, N-[(4- methoxy-6-methyl- pyrimidine-2-yl)-amino- carbonyl]-4-methoxy- carbonyl-1-methyl-] 75 -- 160-162 N-[[[(4,6-dimethoxy-2- pyrimidinyl)amino]carbonyl]- 3-(ethylsulfonyl)-2- pyridinesulfonamide 76 -- 152-159 2-[[[(4,6-dimethoxy-2- pyrimidinyl)amino]carbonyl]- amino]sulfonyl]-N,N- dimethyl-3-pyridine- carboxamide 77 -- 204-206 Methyl 2-[[[(4-ethoxy-6- (methylamino)-1,3,5-triazin- 2-yl)aminolcarbonyl]amino]- sulfonyl]benzoate FUNGICIDES 78 carbendazim 302-307 methyl 2-benzimidazole- carbamate 79 thiuram 146 tetramethylthiuram disulfide 80 dodine 136 a-dodecylguanidine acetate 81 chloroneb 133-135 1,4-dichloro-2,5-dimethoxy- benzene 82 cymoxanil 160-161 2-cyano-N-ethylcarbamoyl- 2-methoxyiminoacetamide 83 captan 178 N-trichloromethylthiotetra- hydrophthalamide 84 folpet 177 N-trichloromethylthio- phthalimide 85 thiophanate- 195 dimethyl 4,4'-(o-phenylene)-

#### Current US Original Classification (1):

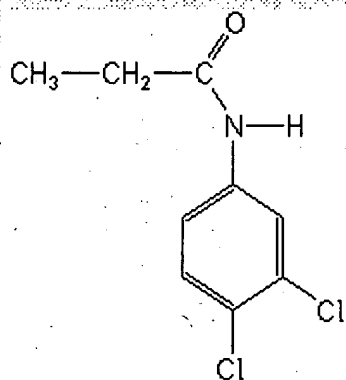
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#### CLAIMS:

9. Water-dispersible or water-soluble pesticidal granules which contain at least about 10% voids and comprise agglomerates having a size in the range 250 to 1500 microns which agglomerates are comprised of pesticidal particles having a size in the range of 1 to 50 microns in diameter bonded together by solid bridges of a water-soluble heat-activated binder as described in claim 1.

# propanil

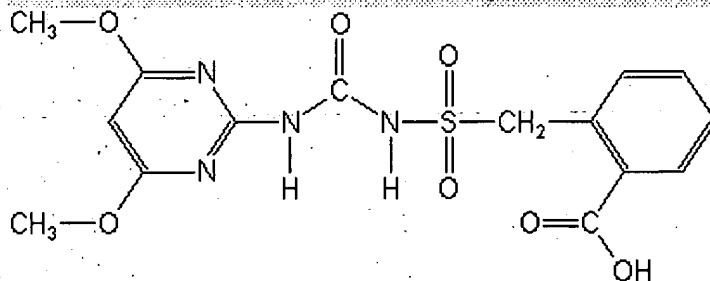
<b>STATUS:</b>	ISO 1750 (published)
<b>IUPAC:</b>	3,4-dichloropropionanilide
<b>CAS:</b>	N-(3,4-dichlorophenyl)propanamide
<b>REG. NO.:</b>	709-98-8
<b>FORMULA:</b>	$C_9H_9Cl_2NO$
<b>ACTIVITY:</b>	herbicides ( <a href="#">anilide herbicides</a> )
<b>NOTES:</b>	The name "DCPA" is approved by the Japanese Ministry of Agriculture, Forestry and Fisheries.

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# bensulfuron

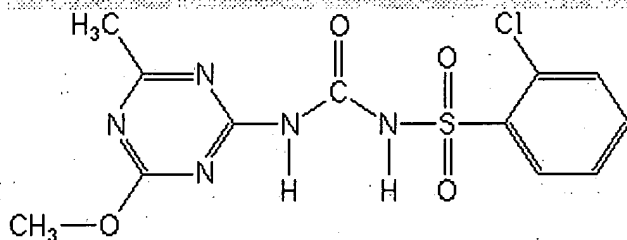
<b>STATUS:</b>	ISO 1750 (approved)
<b>IUPAC:</b>	?-[(4,6-dimethoxypyrimidin-2-ylcarbamoyl)sulfamoyl]- <i>o</i> -toluic acid
<b>CAS:</b>	2-[[[[(4,6-dimethoxy-2-pyrimidinyl)amino]carbonyl]amino]sulfonyl]methyl]benzoic acid
<b>REG. NO.:</b>	99283-01-9
<b>FORMULA:</b>	C <sub>15</sub> H <sub>16</sub> N <sub>4</sub> O <sub>7</sub> S
<b>ACTIVITY:</b>	herbicides ( <u>pyrimidinylsulfonylurea herbicides</u> )
<b>NOTES:</b>	This compound is normally used as a salt or an ester, the identity of which should be stated, for example bensulfuron-methyl [83055-99-6].

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# chlorsulfuron

<b>STATUS:</b>	ISO 1750 (approved)
<b>IUPAC:</b>	1-(2-chlorophenylsulfonyl)-3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)urea
<b>CAS:</b>	2-chloro- <i>N</i> -[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)amino]carbonyl]benzenesulfonam
<b>REG. NO.:</b>	64902-72-3
<b>FORMULA:</b>	$C_{12}H_{12}ClN_5O_4S$
<b>ACTIVITY:</b>	herbicides ( <a href="#">triazinylsulfonylurea herbicides</a> )
<b>NOTES:</b>	

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